

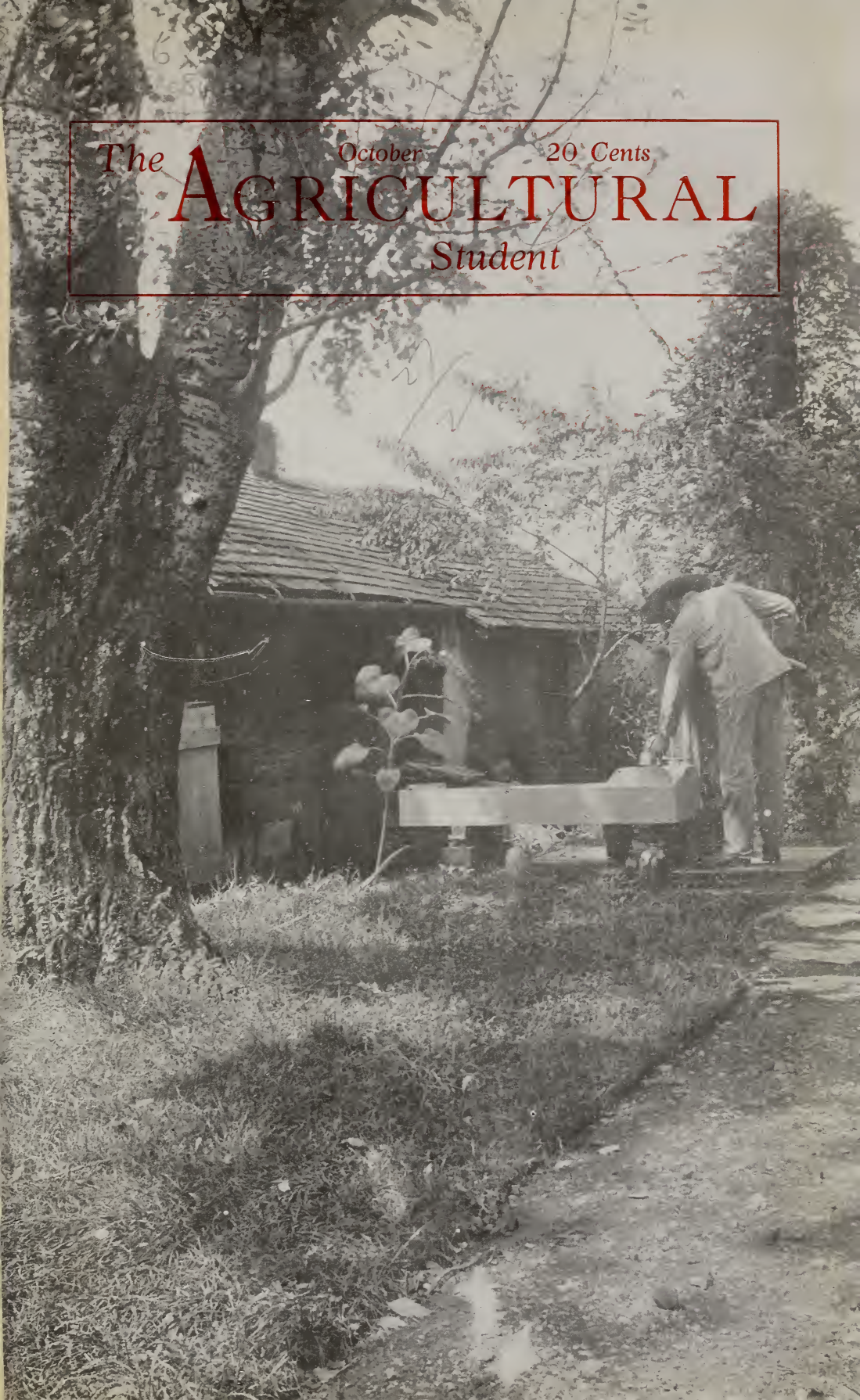
Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

The **AGRICULTURAL** Student

October

20 Cents





Life on The Farm Electrical

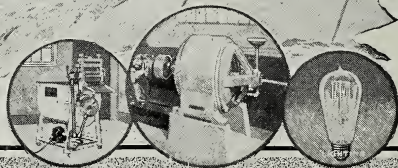
ON the electrical farm, even with less labor, the harvests are bigger and the comforts greater.

Through the use of electric pumps and motors, arid lands have been reclaimed and the processes of cultivation and harvesting made easier.

The "chores," the farm boy's drudgery, are done at little expense by electrically-driven appliances, and in the home the farmer's wife has electricity for her housemaid, the push of a button dispelling household cares.

To make the electrical machinery which generates and transmits this force, to study its application in the form of light, heat, and power, and to make it of greater avail to mankind, has been the service of the General Electric Company for more than a quarter of a century.

95-8351



GENERAL ELECTRIC COMPANY



Short-Cutting Farm Hauling with International Motor Trucks

Today progressive farmers everywhere are downing old man High Cost of Farming by employing time-and-labor economy short-cuts wherever possible.

The very important job of hauling, for instance, instead of being side-tracked until some time when farm work isn't pressing, is disposed of quickly and economically with the help of **International Motor Trucks**.

By this haulage short-cut the crop to be marketed is usually handled only once and losses that so often are sustained through storage drying out, rats, mice, etc., are prevented. Short-cutting farm hauling is far more profitable than side-tracking it.

The fact that **International Motor Trucks** are the product of a concern that has a broad-as-agriculture reputation for fair dealing, good value, and producing dependable farm equipment, should be ample assurance that these trucks will in all cases fulfill their missions of low cost service.

The sizes range from $\frac{3}{4}$ -ton to $3\frac{1}{2}$ -tons capacities and there is a style of body for every hauling requirement

INTERNATIONAL HARVESTER COMPANY

CHICAGO

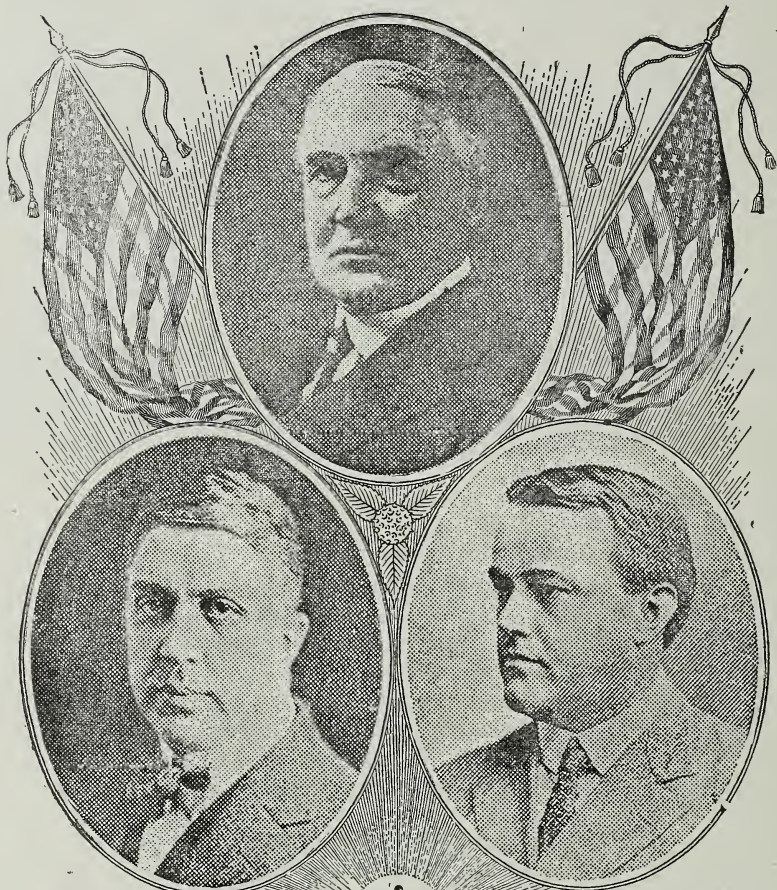
OF AMERICA INC.

U S A

92 Branch Houses in the United States.

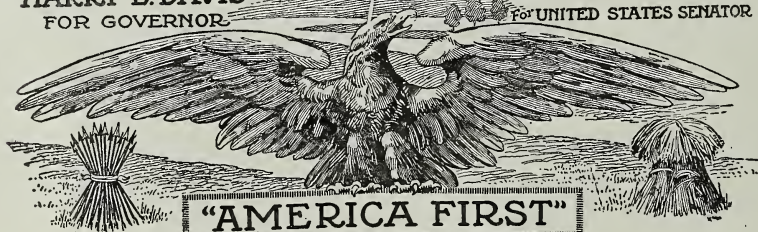
Three Big Men for Three Big Places

WARREN G. HARDING
FOR PRESIDENT



HARRY L. DAVIS
FOR GOVERNOR

FRANK B. WILLIS
FOR UNITED STATES SENATOR



VOTE THIS TICKET NOVEMBER 2, 1920

Contributors

L. A. Myers

R. L. Creeper

A. O. O'Neal



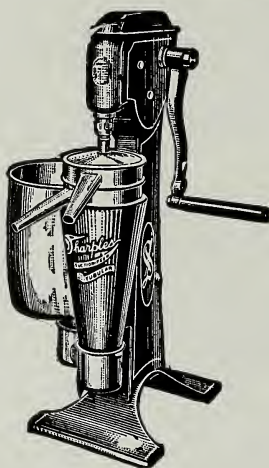
Staff

C. VICTOR KENDALL, '21	Editor-in-Chief
JOS. J. MATTUS, '22	Business Manager
Vance Clever, '21	Managing Editor
H. L. Gartner, '21	Associate Editor
O. R. Keyser, '21	Associate Editor
H. W. Harshfield, '22	Campus Echo Editor
Corwin Knowles, '22	Advertising Manager
Ralph A. Hinman, '23	Assistant
Robert Brown, '23	Assistant
Otto Kline, '22	Publicity Manager
A. M. Hedge, '21	Circulation Manager
Russel W. Miller, '23	Assistant
C. W. Laisy, '22	Assistant

DEPARTMENTAL EDITORS

E. B. Barker, '21	Vocational Agriculture, Etc.
J. A. Malick, '23	Assistant
B. P. Hess, '22	Farm Management
Egeva Wiseman, '21	Horticulture
J. C. Houser, '21	Assistant
Daisie Cloe Cunningham, '21	Home Economics
H. G. Doster, '21	Farm Crops
Robert Mayne, '21	Assistant
G. W. Timmons, '22	Agricultural Engineering
C. R. Bookmeyer, '21	Assistant
J. V. Temple, '21	Short Agriculture
C. F. Moses, '22	Soils
W. E. Keyser, '22	Assistant
George J. Schmidt, '22	Animal Husbandry
J. Glenn Bates, '21	Assistant
S. C. Powers, '23	Assistant
J. E. Frew, '22	Dairy
C. W. Knowles, '22	Assistant
Irvin Bamberger, '23	Alumni Notes

SHARPLES—the pioneer American Cream Separator and the only *suction-feed* separator



*"skims clean
at any speed"*

"Skims clean at any speed"—what does that mean to dairymen?

TO one dairyman, it might mean the saving of a certain number of dollars of his profits that would otherwise have been lost. But to his more far-seeing brother, it means a saving of hundreds of thousands of dollars a year for the dairy industry as a whole—and for a world crying constantly for *more butterfat*—

"There are no substitutes for dairy foods."

—P. M. SHARPLES



SHARPLES, as a name, has come to mean to the dairy industry more than a mere machine, even though that machine is the world's most efficient cream separator—That is why, today, *there are more SHARPLES Separators in use than any other make, American or foreign.*

THE SHARPLES SEPARATOR CO.
West Chester, Pa.

Branches: Chicago San Francisco Toronto

CONTENTS



	PAGE
FIELD SELECTION OF SEED CORN—	
L. D. Myers-----	71
SUCCESS WITH PURE-BRED SWINE—	
R. L. Leeper-----	75
RURAL SCHOOL NEEDS IMMEDIATE HELP THROUGH LEGISLA- TION—	
A. O. O'Neal-----	76
FARM CROPS -----	80
HOME ECONOMICS -----	82
THE CAMPUS ECHO-----	84
ALUMNI -----	85
EDITORIALS -----	86
OCTOBER -----	88
VOCATIONAL AGRICULTURE, BOYS AND GIRLS CLUB WORK....	90
HORTICULTURE -----	100
SOILS -----	104

The Great Jubilee Feature

**MAMMOTH BARBECUE
AND CARNIVAL**

On the Campus

Alumni Day, October 15

EVERYBODY'S COMING !

Insures Cow Health

THE insulating blanket of still air in a Natco stable wall prevents sudden temperature changes. It protects the health of your cows and keeps up the milkflow in uncertain weather. Natco Hollow Tile walls do not gather moisture as do walls of solid masonry, nor do they absorb grease, dirt or foul odors.

Natco Barns

are a permanent *investment* — not an expense. They need no painting and very seldom require repairs. They withstand severest windstorms and are fire-safe, being constructed of burnt clay tile. Natco walls are exceedingly strong. Masons lay up these walls very rapidly, easily handling the large-size units.

Whatever you intend to build, build it with Natco Hollow Tile. Many uses are pictured and explained in our book, "Natco on the Farm." Write for it today — *free*.

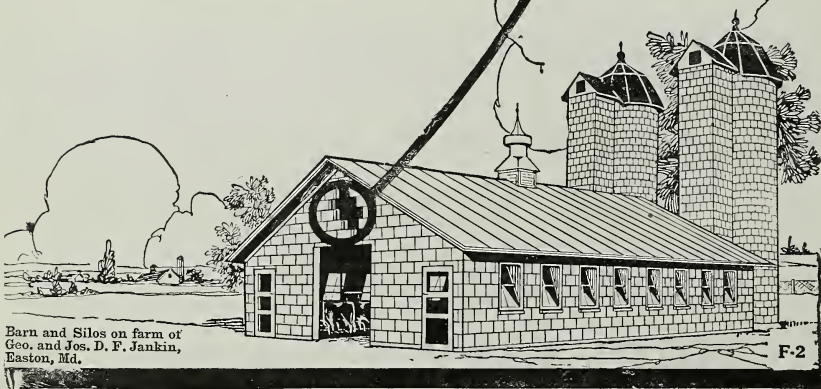
National Fire Proofing Company

1132 Fulton Building Pittsburgh, Pa.

23 Factories assure a wide and
economical distribution



Section of Natco
wall showing
still air spaces



Barn and Silos on farm of
Geo. and Jos. D. F. Jankin,
Easton, Md.

F-2

The Agricultural Student

VOL. XXVII

OHIO STATE UNIVERSITY, COLUMBUS, OHIO, OCTOBER 1920

No. 2

FIELD SELECTION OF SEED CORN

By M. T. MYERS.

(In our last issue we suggested that some that should be given to next year's corn crop. The whole proposition is found in the following article by one who knows.)

IF WE look back through the recent history of corn production we find that; about twice each decade on the average, there occur years when the corn crop of the country does not mature properly and the following spring there develops a seed corn "situation." These situations are serious matters, because far too many corn growers fail to provide against them by proper thought as to their seed corn from year to year with the result that on these occasions many acres must be planted with very inferior seed. In March, 1908, the Ohio Station found that the situation called for the publishing of a circular entitled "Seed Corn for the Season of 1908." The first two sentences of this circular read as follows: "In all probability high grade seed corn is scarcer in Ohio this season than for many years. The principal cause for this is of course, the wet cold growing season of last year, together with the cool, cloudy fall." In 1912 conditions had again been such as to cause considerable difficulty in obtaining good seed corn and the station published another circular on "The Seed Corn Situation." The problem was so acute thruout the corn belt in 1912 that the United States Department of Agriculture also found it advisable to issue a circular thru the Bureau of Plant Industry on this same "Seed Corn Situation." The more recent "situation" of 1918 is probably still so vivid in the minds of most corn

growers that it should hardly be necessary to call attention to it here, but many corn growers failed to learn their lesson even then. On the other hand a few did learn from these experiences and seed corn "situations" are less likely to confront them in the future.

No doubt it is more expensive to provide the best seed corn each year, but there is no operation on the average farm, in any season, that is more remunerative than time spent intelligently in selecting and caring for a plentiful supply of first class seed corn. Not only does it pay in avoiding the ever menacing "situation," but good seed also pays many times over by increased yields every year. Strong well cared for seed even tho it may not show a higher percentage of germination, germinates more vigorously, is less effected by adverse conditions in the spring thus attaining a lead over weaker seed of the same breeding which it does not lose to maturity and demonstrate itself in the crib. Refined experimental methods are not required to show that these differences exist for they are so obvious they may be seen by the casual observer during any corn growing season. It would only require demonstrating in their own fields along side of their own seed to convince many farmers that they could make money by spending some.

Just what method of procedure would constitute the intelligent selection and care of seed corn on the average farm

is a very hard question to answer. A great deal of confusion still exists on all sides and we find a great variety of methods used on the farms varying from practically nothing to some very elaborate systems. Sometimes there is some waste effort expended but usually we find the error toward the side of too little attention rather than too much attention paid to the gathering and storing the seed corn supply. The recommendation from the experiment stations and extension departments vary almost as much as do the practices so that the confusion is not to be marveled at. However, there is a certain minimum below which no farmer should allow himself to go. The method of selecting and caring for seed corn found to give the best results, and now used extensively over the corn belt on general farms will here be outlined.

First, the farmer should obtain an adapted variety which suits his personal preference and does well under his conditions. High yield, adaptation to the local soil and season, a certain degree of uniformity in kernel shape to permit uniform dropping by the planter, and, in the case of corn for the market, uniform color, are the most important characteristics in choosing a type of corn. No planter manufacturer, even, claims that his machine will drop uniformly all the different shapes and sizes of kernels to be found within every variety of corn, and in-as-much as the market usually pays a slight advance for corn grading under a standard color, some attention should be given to these points. Further than this any great effort expended in intensively breeding for fancy or show points is a loss of time. Corn yields very readily to the hand of the breeder so that many useful and useless things can be accomplished with it in the course of just

a few years. Most corn growers will have their own personal ideas which they will want to impress on their corn. This in itself is not to be condemned, but it has long been shown by experiment stations that the score card is of no value in isolating high yielding strains and the reader is referred to the work at the Ohio Experiment Station by C. G. Williams reported in Bulletin 282, on "Corn Experiments." Furthermore, even the so called "highest bred" varieties of corn are very mongrel races. In fact the more nearly pure a strain is the poorer it is in yielding qualities, and no really pure variety has yet been obtained that would hold a farmer's interest for more than an instant except for its exceedingly poor ability to produce corn. This result of close breeding and the increased vigor resulting from broad breeding were so marked that it was early recognized that high yields in corn was closely related to a high degree of crossing and all the systems of corn breeding, even the ear-to-row method have been so devised as to eliminate close fertilization and obtain as much cross fertilization as possible. Thus we can easily understand why, in many feeding sections where market demands are not so important, many varieties arising from mixtures such as Rotten Clarage, Calico, White Cap and others grading on the market as mixed corn are so popular. These varieties are simply so diverse in their makeup that anything but cross fertilization is almost impossible. We also find varieties which originated by the planting together of two or more yellow varieties or two or more white varieties which meet market requirements and which the devotees think are unbeatable; and they are probably right. For, while too much attention to fancy show points tends toward narrowing the line of

breeding and should be eliminated, still no essential points need be overlooked. Given a variety with essentially the required characteristics as a basis, it is within the power of every corn grower to provide himself with seed corn of better quality and breeding, at less cost, with more absolute surety from year to year than from any other source available at the present time, be it a seedman or a fellow corn grower. In this the careful selection from the home source at the right time with proper care and storage till planted each season have been found to far outweigh all other factors in importance. In the process it is possible from year to year with very little effort to improve and correct many points which are not just satisfactory and bring the variety to more nearly meet the needs of each grower.

The most serious difficulty to guard against in seed corn production is freezing injury. Apparently the best adapted and most productive varieties are those which utilize nearly the entire growing season of the average year. In the majority of years these varieties will ripen fully before the first killing frost altho on occasional years climatic conditions combine in such a manner as to greatly delay the ripening of the crop and both the quality and the yield will be somewhat reduced. It would be possible by rigid selection to modify any variety so that it would be sufficiently early to escape the exceptionally early frosts every year but such a corn would be too small to be a high yielder. Even in the exceptional years, however, it is possible to obtain a supply of first class seed corn from a type of corn adapted to the average season without depending on any but the home supply. It has been found that the lower the moisture content of

the kernel the more successfully will it withstand continued subjection to freezing temperatures without injury to the vitality of the corn. Fairly well matured ears are but little affected by early frosts severe enough to kill growing corn, while subsequent severe freezing may result in much damage to the bulk of the corn. Air dry corn with a moisture content of not over 15 per cent will withstand any amount of winter freezing while under the same conditions the vigor of less thoroly matured corn would be greatly injured. As the corn gradually cures in the shock or crib many of the ears which were injured by the freezing early in the season dry out so that they cannot be distinguished from the sound ears which were mature and able to withstand the winter freezing. The importance of as early selection of the seed corn supply as possible is thus apparent. By practicing field selection from the standing stalk when the corn has matured in the average season and when forced to by early frosts in the exceptional years, a sufficient supply of seed corn known to be sound and free from injury may always be obtained. The next best time from the standpoint of avoiding those ears which have been subjected to freezing injury is while husking corn for feeding during the early fall before the bulk of the crop is ready to crib. Only the driest most mature ears should be selected and by doing so a reasonably sound supply of seed corn can be obtained. Selection delayed much after this later period is at best, risky any year and since unnecessary should not be practiced.

In considering the above facts it is obvious that the manner of storing this corn is no less important than the method of selection in the prevention of freezing injury. The seed ears as gath-

ered will have a relatively high moisture content and if carelessly allowed to remain in sacks or lie in a pile and freeze repeatedly will be liable to mold and will deteriorate in value rapidly. Provision should be made for the drying out of these ears at a moderate rate before they are subjected to severe freezing. In order to accomplish this the corn should be stored in a dry well ventilated room and so placed as to allow a free circulation of air about each ear with no two ears touching each other. [There have been innumerable racks and methods, all with their merits, devised for accomplishing this, and it makes little difference which is chosen so long as it fulfills the requirements and is convenient. Most years the application of artificial heat is unnecessary but during the seasons of abnormal weather conditions some provision for hastening drying and preventing freezing while still containing a high percentage of moisture does a deal of good and is worth the cost. A point that should be kept in mind is that with the application of artificial heat the matter of sufficient ventilation must be more closely watched. Many places about the farm home provided with sufficient heat and available for storage are deficient in this respect, and should not be used. After the corn has been sufficiently dried out it may be stored in boxes or sacks, the only precautions necessary being to protect it from further dampness in storage and from rats and mice.

We have already noted the superiority of field selection from the standing stalk over any other method of providing a certain supply of sound seed year in and year out but it has in addition many other advantages to recommend its general use. The characteristics of the stalk that bears the ear and the stand in which it grew are points of far

more importance than the fancy show points of the ear which is selected for seed. At no later time is it possible to base selection on as many important points than while it is still standing in the field. At husking time one can tell nothing about the stand and only a very little about the character of the stalk, while at any time thereafter it is altogether impossible to consider anything except the looks of the ear. In field selection the stand may be noted and only those ears which come up to standard under normal conditions chosen. Many fine looking ears when seen in the crib may simply be large and fine looking because they grew in a thin stand with a particularly favorable environment. It is also possible for the grower to select for improvement in many of the important stalk characters such as height, strength, size, leafiness and vigor of stalk, a strong root system to hold the plant erect, height of ear from the ground, position of ear, husk covering and protection of ear, length and size of shank and many other heritable characters which may be modified at very little expense of time or effort.

Recent investigations at the Indiana Station have brought more forcibly to light another important consideration in the selection of seed corn. The prevalence of certain injurious diseases transmitted thru the seed ear, causing considerable loss to corn growers annually has been pointed out. The symptoms are very diverse and often times rather elusive and often quite injurious. External evidence of disease is indicated by lodged broken shanks and a tendency of the plants to die early. Internal evidence of disease is indicated by a dark brown discoloration at the nodes inside the stalk and ear shank. The organism causing scab in wheat is one of the organisms causing this rot of the

stalks and shanks of corn. Field selection offers an excellent opportunity for detecting many of the diseased ears. The following suggestions from the Indiana Station should be followed: "Mature ears on disease free stalks should be selected for planting." "Ears should never be selected from smutted stalks, or from stalks which are rotted or whose roots are rotted. Neither should ears be selected which have rotted broken shanks." When the ear is broken from the stalk the broken shank should show a fresh, greenish white color." "Many rotted plants die prematurely."

"A mature ear on a living green stalk is always best for seed purposes."

With all its many advantages over other methods, the cost of selecting seed corn from the standing stalk is not excessive. In fact many growers select enough seed corn by this method each year to plant two or three times their own acreage. This is added insurance against any contingency. Corn over two seasons old may be discarded but is usually in demand by less provident neighbors and easily sold, while good seed, at a price sufficient to repay the grower for extra care and cost of producing it.

SUCCESS WITH PURE-BRED SWINE

By R. L. LEEPER.

(This article tells of the experience of Short Ag. man. Undoubtedly others have had similar ones. If you have why not tell the other fellow thru this paper? Next issue the Short Ag. Dept. will appear with Mr. Temple as Editor.)

IF THE success of the many breeders of pure-bred swine was given more publicity than it now is, it would no doubt be a great factor in influencing several more farmers to improve the herd of hogs.

In the first place, the business of breeding registered hogs has in many instances been abused by price boosters who claim to have paid high prices (with no foundation) for certain animals. This, of course, puts the smaller or average breeder and farmers in a very low position, and many times so discouraging as to cause him to quit entirely. Many others try to contend with these high prices, by honest principles, and in the majority of cases, they are financially wrecked.

It takes only a few cases like this to open the eyes of the prospective swine breeder and the consequences are that he does not raise pure-bred swine. Thus we can see why the breeding of pure-bred swine has come to be looked upon

as a "game" rather than a sound business proposition.

In the starting of a herd of pure-bred swine, I can relate no better method than that of our own experience:

In March, 1918, we bought two pure-bred Spotted Poland China gilts from the northern part of Indiana. We selected this breed after investigating and comparing them with other breeds; also they were not at all common in our community and we felt that the demand for them would be greater than it would for breeds that were more common. This, we found to be true. In August, we purchased a yearling sire, (a prize winner at Ohio State Fair); and from this trio we have a herd of twenty good brood sows by selecting the best sow pigs. Besides this we have sold several good male pigs and always at a good price.

Thus we can see how easy it is to get into the pure-bred swine business, on a sound basis. A start in this business I

think should be taken slow, because one is liable to neglect a larger herd and the results may be somewhat discouraging and cause him to quit. I happen to know a man who less than two years ago started in the Shorthorn cattle business; buying about twelve head, and now he does not own any pure-breds at all, simply due to the herd not multiplying in value as fast as he expected. I would therefore, advise starting with two or three head to insure the greatest success in the end.

Anyone, now breeding grade swine, would profit very much by making a venture in the pure-bred business, as the animals mature quicker, fatten easier and on less feed, and are a real pleasure to take care of for the interested farmer and breeder. I feel that no farmer would ever regret his start in breeding Spotted Poland Chinas, for they are very prolific, have immense size and in every way come up to the standard sought by every good American farmer who wants to raise better sows.

RURAL SCHOOLS NEED IMMEDIATE HELP THROUGH LEGISLATION

By A. O. NEAL, *Specialist in Rural School Administration.*

(The rural schools need help. They are not getting a square deal. Every citizen, city or rural, should be interested in seeing that they get the help needed. One way that help can be given promptly is through proper legislation, brought about by wholesome public opinion.)

IT HAS been said that we have no right to expect public support from any source except the public. This year the public will have an opportunity to express its opinion, as all the States except Alabama, Kentucky, Louisiana, Maryland, Mississippi, and Virginia hold a session of the legislature during the next 12 months. No problem to be considered is more vital than the school problem, and the phase of the problem that is most pressing is the improvement of the rural school.

If the citizens of any community would act intelligently on this problem

all they need to do is to compare the school advantages of the children living in the city and those living in the rural sections in their immediate vicinity. If they will answer the following questions they will readily see the inequality of educational opportunities:

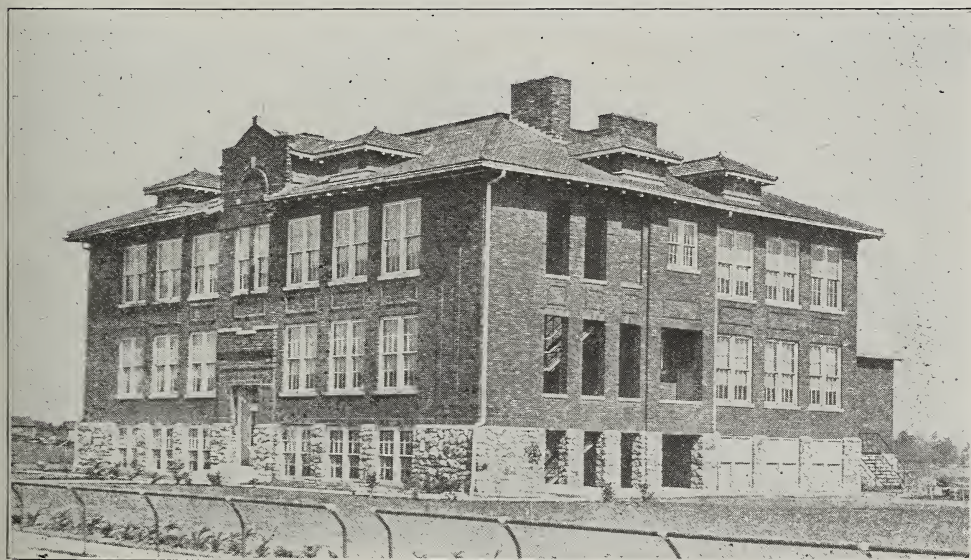
1. Where are the better trained teachers?
2. Where are the better paid teachers?
3. Where is the longer school term?
4. Where is the greater amount of money spent for each child?

COMING IN AN EARLY ISSUE

Some Problems of the Southern Pork Producer by.....D. W. Williams
Accomplished Bits of Community Work by.....L. D. Mennel
Red Clover by.....Geo. L. Schuster
The Care and Management of the Brood Sow and Litter by.....
.....Prof. J. S. Coffey
The Case of Seed Corn by.....J. C. Neff



WHICH SCHOOL WILL HAVE THE BEST TEACHERS?



5. Where are health conditions better?

6. Where is the course of study better fitted to the needs of the pupil?

And the final question would be: Is there any justification for the inequality of educational advantages?

Looking at this problem from the nation-wide standpoint, we find that it

is a general condition that the teachers with the best preparation are found in the cities.

Studies in various states show that the typical rural teacher is immature, poorly prepared, and insufficiently paid. Only four states have legal restrictions, by which only those are eligible to teach who have completed a four-years high-

school course and have had at least a few weeks of professional training. In the remaining states anyone who can pass the examinations set by the school boards can be placed in charge of a school. Is it any wonder that in some states as high as 50 per cent of the rural teachers are boys and girls without high-school or normal training?

120,000 TEACHERS NEEDED IN 1921.

Certainly this condition calls for serious consideration by the legislatures. Standards must be established for the protection of the schools. Teacher-training institutions must be provided to supply the 120,000 teachers required next year. This is especially apparent when it is known that the combined output of all the teacher-training institutions is less than 30,000. A plan providing increasing preparation of teachers throughout a period of four years would make it possible by 1925 to require all rural teachers to be graduates of high-schools and have some normal training. This would make it possible to bring the rural schools to a reasonable minimum of efficiency.

To get and hold good rural teachers, salaries must be provided which insure a living wage. A minimum salary for all teachers, based on preparation and successful experience, has been in operation in Indiana for 12 years and in a number of other states for several years.

It is significant that the states which have the highest standards for teacher preparation are the ones in which the salaries are best and the shortage of teachers is least. Legislation establishing such a minimum has been advanced by the Bureau of Education in its recent publications.

The rural school term is shorter than the term in the city schools. The average rural school term is more than two

months less than the average of the city school. As 58.5 per cent of the total school pupils is rural and 62.2 per cent of the total school enrollment is rural, this is a condition which demands careful consideration and legislative action.

The attendance of the rural pupils must be increased. The latest report of the Bureau of Education estimates that 25.4 per cent of the school term provided by the United States is lost because of poor attendance on the part of the pupils. The financial loss due to this item is enormous.

All states now have some form of compulsory attendance laws, but in many states they are inadequate. Steps should be taken to adopt such attendance laws as would see that children from 7 to 15, inclusive, should be in the schools for the full term, and from 14 to 16 in school unless they are regularly employed in some profitable work. There should be provided attendance officers, with adequate power and support to see that the schools provided by the state are taken advantage of by the children within its borders.

High-school education must be made available for the rural children and this must be possible without their having to leave home to obtain such education.

CONSOLIDATION OF DISTRICTS URGED.

This is best accomplished by the plan of consolidation of school districts, whereby greater areas of property are taxed for the benefit of the whole community. The progress in consolidation in the last few years indicates that this is one of the most promising means of solution. The most rapid progress in consolidation during the last year has been in Iowa, and this has been made possible through the wise legislation of its last general assembly.

The acknowledged need for health in-

struction, and for the activities which are necessary for such a program demand that especial attention be given to such legislation as will benefit the rural school in this important item. Such states as have provided county school nurses and health instruction in rural schools feel that the results abundantly justify the effort involved.

In order to carry out the above program several things will be necessary. First of all, there must be a larger unit of taxation and a more equitable distribution of funds. In some states a large proportion of taxation is born by the state and a plan by which the state would furnish approximately one-third of the funds needed, the county one-third, and the immediate locality one-third is suggested as offering many advantages.

There should be an adequate plan for

administration and supervision of the schools. The importance of the county superintendent must be appreciated, and such help given him as will enable him to carry out a program and a policy as efficiently as does the city superintendent with his administrative force.

One may say that all this involves problems which will require great effort in their solution. This is recognized, but the suggestions are made with a definite idea in mind that the rural child is entitled to as good an education as the city child; and with the knowledge that unless provision of this kind is made that the exodus from the country to the city will continue as long as ambitious people will go where there can be the best advantages for their children. The future progress of our Nation is intimately involved in this great question.

THE HOG

Your are an anathema!

Your gross rotundity and greed typify
the traits we most despise,

And your habits transgress all our laws
of conduct.

You live to eat!

You eat to die!

You die to eat!

You are admirable when you are fresh.

You are sublime when you are pickled.

You are dead when you are cured.

Yet you are generous.

Your insides clothe you outside when
your funeral director takes charge.
(Sausage.)

Your bristles kiss the pearls that call
for your undoing. (Toothbrush.)

Your stomach offers ease to the stomach
you upset. (Pepsin.)

You are a coward.

You are a squealer when you are hun-
gry and squeal when you are hurt.

But you fought the fight for freedom
to kill the greed in man.

You went overseas 20 million strong
You made the supreme sacrifice.

You won the war.

You have no medals for valor.

You have no monument to your honor.

Your epitaph is the smile on millions of
faces.

You are an anomaly.

For the victims of your might squeal for
your solace.

—*By Stephen Chase, in Live Stock
Farmer.*

“How few think justly of the thinking
few:

How many never think who think they
do.”

The best rosebush after all is not
that which has the fewest thorns, but
that which bears the finest roses.—*Hen-
ry Van Dyke.*

FARM CROPS

H. G. DOSTER, Editor; ROBERT MAYNE, Assistant.

RYE FOR NEXT SPRING

Rye is an excellent spring pasture for pigs and cattle for the period between the dry-lot and clover pasture. If it is not pastured too closely, it will yield a fairly good crop if it is threshed. A common way is to plant it between the rows of corn. This is an economical practice if early pasture is needed. Where rye is to be sown for this purpose it should be planted about the middle of September.

OATS A GOOD CROP TO SELL

It is sound farm business to sell some farm crops for cash. Farm management surveys have shown that the safest and soundest practice is to have about one-fifth of the total receipts on the farm come from the sale of crops.

The crop that can usually be sold most economically is oats. Oats is not generally as profitable a crop to grow as some others but a good rotation needs this small grain. Corn, if sold as a cash crop, makes a larger return per acre but corn can be ordinarily fed more profitably than it can be sold for cash. Hence, oats makes a better crop to sell. On most farms, oats are only fed to horses and it is possible to buy feeds that are cheaper for substitutes. Many farmers would rather sell their oats and buy corn or other forms of concentrates.

AVOID THE USE OF OLD RYE

Many farmers have had the unhappy experience of planting old rye. Unlike wheat the vitality of the rye germ seems to decline after the first year much more rapidly than most other grains. Therefore, rye that is over a year old should not be used for seed.

DON'T FORGET ABOUT

THE HESSIAN FLY

Before you sow your wheat be sure to consult the bulletin sent out by the Ohio Experiment Station which shows the fly free dates. Every year there are a few who do not heed this advice and as a result they not only ruin their own crop but that of the whole community.

WHEAT NEEDS FERTILIZER

DESPITE HIGHER PRICE

Despite the higher prices of fertilizers, it will pay Ohio farmers to give attention to the feeding of the wheat crop, according to officials of the Ohio Experiment Station, Wooster.

Experimental tests conducted for 25 years on various county agricultural farms and at the Experiment Station show that there has been an increase of approximately six bushels of wheat for every 100 pounds of acid phosphate applied.

Acid phosphate this fall will cost about \$35 a ton, being about \$8 higher than the spring delivery.

If the price of wheat, however, stays higher than \$2, there will still be ample margin to use fertilizer when wheat is fertilized at the rate of 200 to 300 pounds per acre.

Fertilized wheat makes a good growth in the fall and is better able to recover from attacks of Hessian fly.

PLENTY OF FERTILITY

LESSENS FLY DANGER

That Ohio farmers will profit by making the best use of their farm manure in growing wheat is pointed out by

soil fertility officials at the Ohio Experiment Station.

An experiment covering 21 years of time, in which eight tons of fresh manure and 320 pounds of acid phosphate has been applied to the corn crop, the corn being followed by wheat without any further treatment, has resulted in an average production of 66 bushels of corn per acre followed by 28 bushels of wheat.

The best results are secured when the manure is hauled directly from the stables and spread upon the fields. Where eight tons of common yard manure has been applied directly to wheat the yield has been 24 bushels per acre.

Good results are also secured in top-dressing the fields during the winter time, at the rate of four to six tons per acre, and if it is impossible to spread manure upon the land before plowing for wheat the manure may be applied during the winter.

By using heavy applications of manure and acid phosphate it is possible to feed the wheat crop in such a way as to lessen the danger from the activities of the Hessian fly.

TOBACCO ROOT ROT CAUSES UNUSUAL LOSS

Root rot of tobacco for the past few years has been causing more or less than all other tobacco diseases and insect pests combined, according to the department of botany at the Ohio Experiment Station. The department conducts experimental tests with tobacco at Germantown, Montgomery county, each year. These tests compare rotations with different series of crops to reduce the root rot.

Root rot is identified in tobacco by failure of the plants to grow rapidly. This slow growth is due to the rotting of the feeding roots and when hot dry

weather comes on the plants wilt quickly.

Sometimes when seasons are favorable to growth the root rot does not show so much damage, although the dried leaves of tobacco have a dead, papery appearance and feel harsh to the hand.

Sterilizing plant beds with steam each year seems to destroy root rot in the seedlings. In some tests the root rot has been eradicated from seedbeds by covering with a layer of sand, but sterilization is generally relied upon.

The Department of Entomology co-operated this year with the State University and the State Department of Agriculture in making a state-wide wheatfield survey. Special stress was placed on the Hessian fly situation. Mr. Remy covered Hardin, Crawford, Marion, Delaware, Madison and Licking counties; Mr. Miller covered Stark, Holmes, Medina, Wayne, Summit and Tuscarawas counties; and Mr. Lowry covered Clermont, Highland, Warren, Green, Butler, Champaign, Miami and Darke counties. A report of the findings of the several surveyors is being compiled and will be published later.

THESE ARE THE DAYS

A silver thread of roadway,
And a maze of golden-glow,
Like Sirens, beckon in autumn—
For you are longing to go—

Out into God's own country
Where the season's at it's height,
With air like wine in the sunshine,
And a harvest moon at night.

So then you crank your flivver
When you can't withstand the call,
And boy, you know you're living—
In the country, when it's Fall.
—H. P.

HOME ECONOMICS

DAISY CLOE CUNNINGHAM, Editor.

A. FAYETTE S. KENDALL, Assistant.

OCTOBER HINTS

Inside there are many preparations to be made for winter. It is not the fashion to speak of housecleaning, nowadays. Well and good! Keep as clean as possible, surely; but just before winter, after the summer's open windows, dust, and heavy, beating showers, we must put the house in fair, sweet order for our long sojourn within doors. Paint must be wiped with an amount of thoroughness proportioned to the size and age of the family—little hands make many finger marks; windows must have a thorough washing inside and out. See that the double windows are in order, and reset any broken panes.

Try the last of this month or early in November, to effect that almost impossible combination—perfectly clean outside windows, immaculate outside of inside windows, and a man to put the double windows up. If one's family should happily include little children, the fall cleaning should be as thorough and important as that of the spring. If it is small and consists of grown-ups only, a thorough window cleaning and only a light wiping of paint in the rooms least used is sufficient, with the inference of the regular, systematic weekly cleaning between times. Dining-room and kitchen, with adjoining pantries, should be thoroughly and immaculately cleaned twice a year, however. Put the large rugs out for a last outside airing. See that the thin summer clothes, often needed in September, are now washed, ironed, and put away. The convenience of finding summer garments ready to put on in a hurry on some suddenly hot spring day is great,

and counterbalance any objections to this practice.

The garden must be cleaned up; another family "field day" must be called; every one must get busy! The multiplication in variety and number of "pests" calls for an imperative garden clean-up in the late fall. Pull out the debris remaining from harvested crops, put what is suitable on the compost heap, and start a pile for a good bonfire. Woody stalks, which decay slowly, go on the fire. When you are through, the garden should be as clean as in the spring. Latitude makes a difference as to hard frosts; if they have still held off watch the thermometer, and when one is certain pick all the tomatoes, ripe and green. Select the finer green ones, wrap in tissue paper, and store in a cool, dry place in drygoods boxes. They will ripen slowly but well. Watch them and use when ready. Many will last until well into cold weather. Use the smaller ones for making chow-chow, piccalilli, and the like. The green ones, as well as the ripe, are nice sliced, seasoned, dipped in flour or crumbs, and fried.

Do over the house again, as thoroughly as in the spring, in reference to clearing out things. Make over, or give away, or dispose of in some manner all articles of clothing not available for family use. Cut up worn underclothing too far gone for mending and roll up neatly for cleaning cloths. Dispose of summer accumulations of magazines and light literature; there are many hospitals and institutions where they will be welcome. Old hats, shoes, neckties—in fact any articles which will not be immediately useful to you or your

family — should go where they will be put into service at once; this is no time to hoard against a time of possible need. Weed out accumulations of doubtful bric-a-brac and pictures. We all need the suggestions and advice.

It is not too late to plant bulbs—tulips, etc. Order part of your supply of manure and bank shrubberies, etc., for winter, the late part of the month. Keep the leaves raked up and put the delicate ones on the compost heap or use for a winter mulch; burn or bury tough leathery ones which will not easily decay. If you are contemplating starting a new asparagus bed, it may be done in October.

Pick the rest of the pears and store slow ripening varieties carefully away in the dark. An old, empty bureau put in a cool place makes an ideal container. Choice late pears may be wrapped in tissue paper and stored in shallow boxes or baskets. Pick all apples you have, sort, and store. Use wind-falls immediately. If storage room in the cellar is limited, pack some of the full-grown vegetables in wooden boxes, in layers with excelsior, and bury in the garden for early spring use; bury with leaves. Cabbage will keep well in any cold frames, covered with dry leaves, roots, etc. Put the sash over and an old mat over that. Take out one by one, as wanted.

To wash knitted stockings make a lather of boiling water and soap, and when cool wash the stockings in it. Rinse them well in clean water, wring them lightly in a cloth, pull out into the right shape, and dry in the open air.

To freshen a last year's white or light colored felt hat, rub soft ground rice thoroughly into the felt with a piece of white rag. Then brush out well with a clean soft brush.

THE HOT LUNCH IN THE RURAL SCHOOL

When the term hot lunch is used a question comes to one's mind. Just what is meant by the hot lunch, and how can it be prepared and served? The hot lunch is that part of the noon lunch which is prepared at school. The preparation and serving should be simple and easily done. It adds to but does not take the place of the lunch brought from home. It need not mean more than the serving of one hot dish, such as cocoa or a nutritious soup.

The dish served should be such as to provide for tissue building. These may be meat or vegetable stews, cocoa, milk, soup or chowder, or pure dried beans or vegetables. Other dishes of similar character which require only the simplest cooking equipment. Dishes made with milk are the most desirable. Often a child does not drink enough milk, and when milk is combined with other food materials the child likes the dish better than plain milk.

The advantages of the hot lunch, when properly conducted are many. Better health is the most important. Better digestion results from the addition of the hot food. Slower eating and thorough chewing of the food. How often a child crams down his cold lunch so he can get out sooner and play. Hasty eating causes indigestion and consequent ill health. Better school work results from better health conditions. Children enjoy the school lunch and this brings about better school attendance. Another important result is, better table manners are encouraged, for each child waits until all the children are served before beginning to eat, and waits until all are through eating before leaving the table.

With the coming of the centralized

(Continued on page 96)

THE CAMPUS ECHO

H. W. HARSHFIELD, Editor.

RURAL ECONOMICS FIRST

Quite proud are the instructors in the Rural Economics Department of the award of 1st prize at the Ohio State Fair for their exhibit in a class of all Ohio State University departments. The principal feature of the exhibit was a model of a farm layout in which the rotation and arrangement was ideal. The following is the final placing as awarded by the three judges — Mr. Lloyd of the Ohio Farmer, Mr. Baker of the Ohio Experiment Station, and Mr. Ahbroth of the Union Clothing Company:

1st—Rural Economics.

2nd—Entomology and Agricultural Engineering tying.

3rd—Dairying.

4th—Horticulture.

5th—Boys' and Girls' Clubs.

6th—Vocational Agriculture.

7th—Home Economics.

8th—Soils Department.

9th—County Agents.

10th—Publications.

Honorable Mention: Farm Crops, Botany, and Farmers' Institutes.

CHANGES IN THE STAFF

A few changes will be noted in the personnel of the Department of Agricultural Engineering this year. While we regret the departure of those who leave we heartily welcome the incoming members.

J. B. Green, who has served on the instructional force, leaves the University to join the Reliable Tractor company of Portsmouth. The vacancy caused

by the resignation of Mr. Green will be filled by Robert Thompson, former Extension Specialist for the department. Mr. Thompson comes to us with three years training as mechanical engineer at the University of Cincinnati and two years Agriculture at this University.

NEW COURSES TO BE OFFERED IN THE DEPARTMENT

A course in field machinery study, scheduled as Ag. Engineering 118, is to be given this year by Mr. Thompson. The course will offer three credit hours with six hours work in laboratory which is to consist of a detailed study and test of tilling, seeding, harvesting, and belt driven machinery.

The new course will be offered to Home Economics students. Ag. Engineering 115 as a course in Household Mechanics comprised of six laboratory hours giving the fundamentals of soldering, pipe fitting, electrical connections and wiring, use of tools, etc. This is an innovation in the Home Economics curriculum and will offer special attraction to the mechanically inclined co-ed.

Ag. Engineering 116, three hours in Household Equipment, will consist of study of the various labor saving mechanical convenience which enter into the modern home.

WHY SOME FARMERS ARE POOR

The average farmer is awakened by a Connecticut clock, buttons his Chicago suspender to his Detroit overalls, puts on a pair of shoes made in Cleveland, washes in a Pittsburgh basin,

uses Cincinnati soap, dries on a cotton towel made in New Hampshire, sits down to a Grand Rapids table, eats breakfast food from Battle Creek, biscuit made from Minnesota flour, Kansas City bacon and Indiana grits fried in Omaha lard on a St. Louis stove, buys potatoes grown in Michigan and canned fruit put up in California, canned vegetables from Maryland, seasoned with East India spices, puts on his hat made in Philadelphia, harnesses his Missouri mule, fed on Iowa corn, with New York harness, and plows his farm, which is covered by a Massachusetts mortgage, with an Indiana plow. At night he crawls under a New Jersey blanket and is kept awake by a dog, peculiarly a local product, and wonders why he is poor. — *Harry D. Wilson, Comm. of Agr., La.*

SOILS DEPARTMENT NOTES

Mr. Charles Thrash took charge of the experimental work in soils on the University Farm the first of July. He will see that the plots are in proper condition for experimental work, carry on the experiments and harvest the crops and note the results. During the second semester he will assist in Soils 152.

Mr. Valley, who is soils chemist in the Extension Service, has been offered the position of research assistant in the laboratory of Dr. J. G. Lipman of the New Jersey Agricultural College and Experiment Station.

Mr. Joseph Gayle will come from the Kentucky Agricultural College to do graduate work in soils at Ohio State.

The Soils Department is in receipt of a letter from Prof. Simmons of the University of Maine, asking for an instructor in Soils and Fertilizers and assistant in laboratory of Farm Management. The instructorship pays \$1500 for ten months.

With an increase in street car fare students have made the discovery that there are a good many places not worth going to.

Another valuable thing the home gardener is able to get at this time is an unusually large crop of satisfaction.

Food prices fluctuates rapidly, but unfortunately there are few fluctuating appetites.

ALUMNI

Miss Faith R. Lanman, former head of the Home Economics Extension department and Home Demonstration Work, is now head of the Home Economics Department. She was appointed to fill Miss Edna N. White's place.

Miss Ellen M. Miller, of the Home Economics Extension Department, is now working with Miss Edna N. White in Detroit, Michigan.

Miss Treva E. Kauffman has resigned her position with the Home Economics Department. She has accepted a position as supervisor of Home Economics at the University of the state of New York, Albany.

James Marple, an O. S. U. alumnus, is connected with the Stores-Harrison Co. of Painesville.

Announcements are out for the marriage of Alice Rosette Wittover to Virgil L. Beaber, '20. They will live near New Philadelphia.

Miss Alma L. Garvin, '11, who was an assistant in the Home Economics department of Purdue University, Lafayette, Ind., is now a nutrition specialist at O. S. U.

W. H. Herbert, Ag. 4, was married to Helen Yapel, O. W. U., '20. They are located on the groom's farm near Radnor. Mr. Herbert will complete his education at O. S. U.



OF
OHIO STATE UNIVERSITY

A Medium for Exchange of Ideas Between Collège and Farm

EDITORIALS

STUDENTS

We all are glad that we are back in school and to those who are here for the first time we are more than glad to welcome you into one of the foremost agricultural colleges in the country. We are sure you will find it so after you have been here one semester. Now it is a predestined fact that an organization, club, society or what not is only as strong as those who make up the above named body. So let us all get into the various organizations, lend our hands and help out wherever we can. Don't sit back and be a looker on, be a doer. What we want to see here is men and women who are alive, full of pep, up and doing. There are two classes of students. Show us with what class you are going to throw your lot.

"SUFFICIENT"

"Sufficient unto the day is the evil thereof" is an expression of real worth to both student and worker. We are now well started on the year's routine. Some are here to learn, others think they are. A certain percent are here because "Dad" sent them. Which group only can heed the above expression honestly? This group will get the most out of their work, not in Grades perhaps, for they are for the weaker ones who seek Grades and not Knowledge. The others should start now to cram for the finals and then at the "crucial" hour they will be "sufficient" for that apparently necessary "evil," final examinations.

QUESTIONS

Frequently situations arise that cannot be handled without some advice from those who know. By writing to the different departments in the Collège of Agriculture you will perhaps eventually obtain the desired information. To offset this delay write to us and we will be glad to answer any question, by referring to the different experts on the campus, thru the pages of our publication. A self-addressed stamped envelope will bring an answer thru the mail at once.

ROADS

Criticism of the Townshend Highway Bill is still alive. The last claim is that the suggested plan will build pleasure boulevards. If this were true, it would be an excellent objection. However, common sense tells us that the primary reason for good roads as well as automobiles is for business and not pleasure, the latter being secondary.

The Townshend Bill, when it becomes a law, will provide a way to build the "most needed business roads." From fifty to ninety per cent (depending on the locality) of the use of highways is in the transportation of farm products and farm necessities. This has been proven by an actual survey. Assuredly Senator Townshend should feel no misapprehension over the fact that the bill appears to serve the farm most, for is not more than one-half of the business of the nation agricultural?

The bill further provides that the most important roads shall be selected for construction, and that these be so joined as to form a state system, at the same time connecting those of other states. This means, however, that the road instead of being from a farm to one market is a road from the farm to many markets. This "farm to market" system will meet the farmers' chief need—access to competitive markets.

Even the secondary phase, that of pleasure, is of signal importance, for is not the social, recreational and educational advantages that are sure to come with good roads a vital social problem at the present time? Better access to better schools, churches and various farm organizations, such as the grange, and the ease in getting to each others' homes are the social objects to be obtained.

The piecemeal construction as now under way in most states can never get results. The national plan as above outlined is the only sure means of solving this one complex issue of the great industrial and social problem of decreasing rural population.

—X—

ADVERTISING

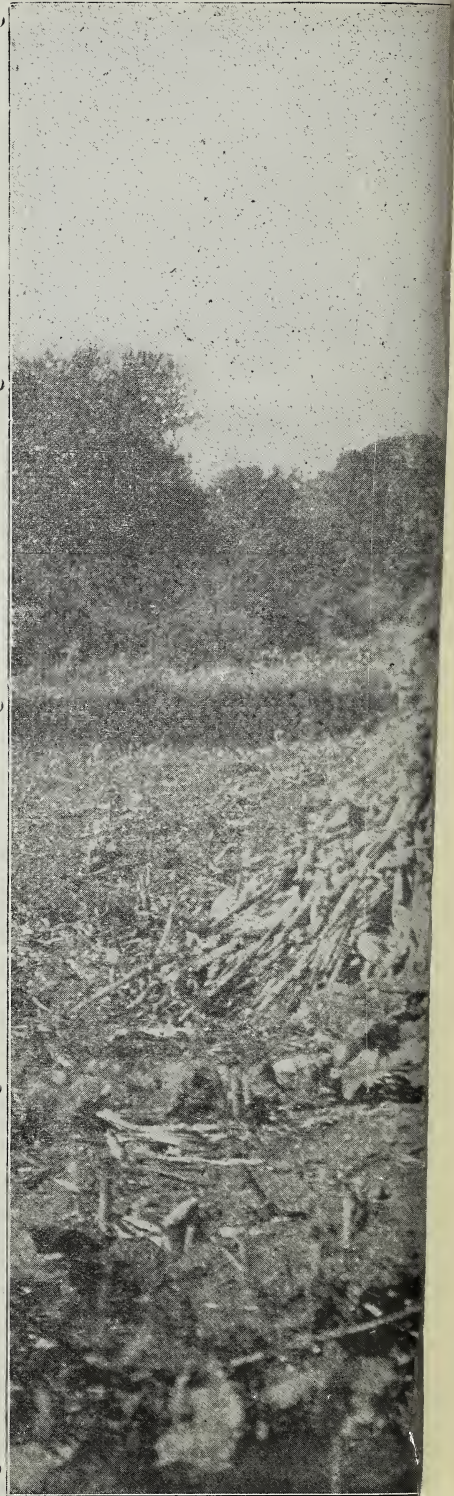
The printed word is more powerful than the spoken word. That is why advertising has become one of the greatest forces of the modern world. Especially is the printed word destined to become one of the farmers' greatest allies. Farmers' organizations are learning to set aside part of their funds for advertising. By telling the consumers simple truths, the producers can do away with much costly and disagreeable misunderstanding. Advertising has settled several industrial disputes. Truthful publicity has never harmed a worthy cause. The advertising farmer is an enterprising farmer.—*Orchard and Garden.*

—O—

When all the world seems a wilderness and all mankind seems in conspiracy against you, know that it is the darkness within your heart. It is because you have lost faith in humanity; because you have lost a hold upon life and it has descended like some dark monster upon you; because you have been untrue to yourself: have been pursuing with too great a vigor those things which, when weighed in the balance with the real things of earth, are utterly worthless and in doing so you have wandered into nameless wastes and turned your back upon the simple, happy things of life.—*E. E. Mannin in Impressions.*

OCTOBER

OLD October's purt' nigh gone,
And the frosts is comin' on
Little heavier every day—
Like our hearts is thataway!
Leaves is changin' overhead,
Back from green to gray and red,
Brown and yeller with their stems
Loosenin' on the oaks and e'ms;
And the balance of the trees
Gittin' balder every breeze—
Like the heads we're scratchin' on!
Old October's purt' nigh gone.



OCTOBER

OLD October's purt' nigh gone,
And the frosts is comin' on
Little heavier every day—
Like our hearts is thataway!
Leaves is changin' overhead,
Back from green to gray and red,
Brown and yeller with their stems
Loosenin' on the oaks and e'ms;
And the balance of the trees
Gittin' balder every breeze—
Like the heads we're scratchin' on!
Old October's purt' nigh gone.



I LOVE Old October so,
I can't bear to see her go—
Seems to me like losin' some
Old-home relative er chum—
'Pears like sort o' settin' by
Some old friend 'at sigh by sigh
Was a-passin' out o' sight
Into everlastin' night!
Hickernuts a feller hears
Rattlin' down is more like tears
Drappin' on the leaves below—
I love Old October so!

—By James Whitcomb Riley.

VOCATIONAL AGRICULTURE

BOYS' AND GIRLS' CLUB WORK, ETC.

E. B. BARKER, Editor; J. A. MALICK, Assistant.

BOYS' AND GIRLS CLUBS AT OHIO STATE FAIR

Duroc Jersey Class.

Boars—Harold Elliott, New Vienna.

Sows—Carrie Obrecht, Loudonville.

Poland Chinas.

Boars—George Jackson, Mt. Vernon.

Sows—Thelma Wolfe, Versailles.

Hampshires.

Boars—Ronald Keenan, Monnett.

Sows—Robert Warner, Dayton, R. F. D. 13.

Chester Whites.

Boars—Ralph Carson, Plain City.

Sows—Rollie Kackworth, Lockbourne.

Spotted Poland.

Boars—Raymond Paxson, West Alexandria.

Sows—Harold Ruse, Lyndon.

Grades.

Clyde Eakin, Lockbourne.

Pig Showing.

Griffin Roberts, Hilliard.

Leland Bishop, Amlin.

Max Morrison, Irwin.

Shorthorns.

Senior Class—Sterling Beaver, Sunbury.

Junior Class—Ed Lee, Sunbury.

Club Class—Delaware County Calf Club.

Herefords.

Senior Class—Tim Scott, Barlow.

Junior Class—Daine Molster, Waterford.

Club Class—Washington County Calf Club.

Jerseys.

Robert Keller, Alexandria.

Holsteins.

Senior Class—Robert Chitwood, Dayton.

Junior Class—Edward Bell, Germantown.

Club Class—Montgomery County Calf Club.

Angus.

Club Class—Scioto Calf Club.

Henry County team, composed of Irene Miller, Tracy Meyers and Kathryn Eicher, with Miss Ruffer as leader, won the canning demonstration team contest.

Adamsville Busy Workers Club, of Muskingum County, with Miss Mary Aler as leader, won first prize in the club exhibit of canned fruit and vegetables.

Rich Hill Homemakers' Club, of Muskingum County, with Mrs. E. A. Paisley as leader, won first in the clothing club exhibit.

Robert Chitwood not only took first prize in the Senior Holstein Calf Class but took both the Junior Champion and Grand Champion of the entire Ohio State Fair Show.

The following is the summary of the Ohio State Fair exhibit:

Pigs exhibited, 75.

Beef and dairy calves, 55.

Pens of poultry, 54.

Club exhibits of canned fruit and vegetables, 67.

Club exhibits of clothing, 27.

Demonstration teams, 31.

Several of the graduates of 1920 have found positions as teachers of agriculture as follows: M. E. Simon is

located in the Allen township school at Van Buren; T. C. Wiley has charge of the department at Wapakoneta; R. E. Holt is beginning his first year at McConnellsville; J. K. Graham has charge of the strong department at Caldwell; B. M. Durbin is located in the Pleasant township school in Marion county; R. E. Sunderland is hired at New Vienna after a month's apprentice as county agent in Kentucky, and J. T. Walker is at Minerva.

From the field of former graduates several have entered the teaching business. H. F. Barnes, '16, is at Medina; Chas. Kirkwood is at Mt. Vernon, T. O. Dickey is at Woodsfield, E. L. McElwain is at Vaughnsville, Fred Slater, who has been farming in northeastern Indiana, is in charge of the department at Stryker, and former county agent E. H. Faulkner of Gallia county, has located at Plattsburg.

The training schools where observation and supervised teaching is conducted are in charge of the following teachers: W. F. Bruce, '11, Hamilton township; A. C. Kennedy, '15, Worthington; H. G. Kenestrick, '19, Grove City; Harry Atwood, '15, Hilliard, and R. D. Kauffman, Canal Winchester. H. W. Nisonger, '14, has been placed in charge of observation and supervised teaching in the department of agricultural education and E. H. McMillen, '17, made utility instructor.

Miss Beatrice Hartman, a 15-year old girl, for the past four years has been a club member in Clinton county. This year besides carrying out club work she has been local leader of the Wayne Busy Workers club. Last year the silver loving cup of the county was won by this club.

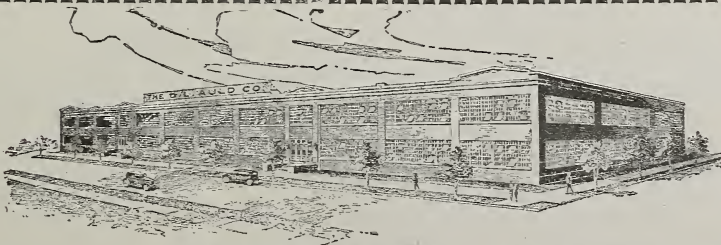
At the county exhibit at Wilmington Saturday, September 11th, eleven out of thirteen members of this club exhibited. The cup was again won by the Wayne Busy Workers club.

Miss Hartman has done a great deal to further club work in her community.

On Tuesday, August 17th, an elimination contest was held at the Brooklyn Heights school in Cuyahoga county. The purpose of this meeting was to select the canning team of club members to represent the county at the State Canning Team Contest. The canning contest was held at the Ohio State Fair where 31 county teams competed for state championship.

At this county contest seven teams competed. Honors were won by the Dover Thrift Club Team of which Miss May Weston is local club leader.

At noon a very delightful lunch was served at the school building to 35 people. The local grange financed the lunch which the Brooklyn Heights sewing club prepared and served.



**The
D. L. Auld
Company**

Send for
Catalogue

**Fifth Avenue and Fifth Street, Columbus, Ohio
FRATERNITY BADGES AND NOVELTY CLUB EMBLEMS, HIGH
SCHOOL PINS AND RINGS, ENGRAVED INVITATIONS.**

AGRICULTURAL EDUCATION

New departments have been approved for organization the coming year in the following schools: Mt. Vernon, Knox county; Brown township, Delaware county; Celina, Mercer county; Willoughby, Lake county, and Woodsfield, Monroe county. This brings the number of approved departments above seventy which is an especially commendable record when one considers that no four-year course in agriculture was in use in any of the high schools previous to 1917.

Prof. W. F. Stewart state supervisor of agricultural education, says there is an unusual demand for teachers of vocational agriculture not only in this state but in many other states as well. That the positions are attractive may be judged from the fact that several teachers were re-elected at salaries from two to seven hundred dollars above their salaries of last year. The new salary schedule is also attracting a large number of students in the college of agriculture to prepare for teaching positions by pursuing the necessary courses while in college. A few reasons which might be mentioned why the teaching profession would be profitable for any capable agricultural student are: It is a period of growth in practical information in agricultural subject matter; every opportunity desired is provided for the development of leadership and showing initiative; working with young people who are interested in farming as a vocation is a most attractive occupation; teaching agriculture is an unexcelled preparation for a position as a farm manager, a county agent, or for commercial agricultural positions, while for farming itself the best training is given since the daily instruction presented in the class room is always presented from the viewpoint of its practical applica-

tion. To those who may wish to advance professionally there is a demand for training teachers, directors of training departments, itinerant teacher trainers, and state supervisors which must be met by the "survival of the fittest" or the men who can best meet the qualifications. Probably no more candid opinion of a teacher now engaged in the work has been expressed on the subject of the advantages of teaching vocational agriculture than the following which is quoted from a teacher now entering upon his third year as a vocational teacher: "Any graduate of a college of agriculture can afford to teach vocational agriculture for at least two years following graduation even if he shouldn't receive a salary of over \$1,000 a year, just for the help it would be to him in actually *learning* his agricultural subject matter." Since the salary stated is less than one-half the average salary of vocational teachers there is therefore additional reason why the teaching profession might well be considered by college men.

Brains Always Score

Three Kentuckians were killed in a fight over a dog. The dog is alive because he ran away and hid. All of which proves that brains will triumph in the end.—*Johnstown Democrat*.

Mother's Ologies

Daughter—"Yes, I've graduated, but now I must inform myself in psychology, philology, bibli——"

Practical Mother—"Stop! I have arranged for you a thorough course in roastology, bakeology, stitchology, darnology, patchology, and general domestic hustleology."—*Texas Christian Advocate*.

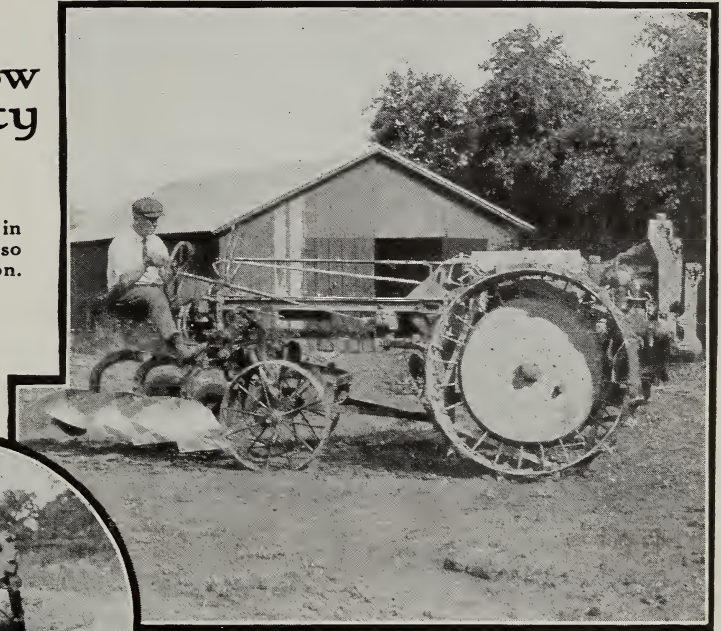
MOLINE

The Universal Tractor

The correct farm power unit, doing all belt and field work, including cultivating, with one man.

3-2 Plow Capacity

The Moline is unique in the tractor field—made so by our patent protection.



Engineering and manufacturing development of the Moline Tractor and Moline Tractor Plows enable us to announce a 3-2 Plow for use with the Moline Tractor.

3 plows for ordinary conditions which prevail in most sections of the country.

2 plows for extreme conditions and unfavorable seasons.

If desired you can use the "drag behind" or horse drawn implements you now have with the Moline Tractor the same as with other types of tractors.

An average saving of 4.7 horses per farm, and a total average saving of \$1447.58 per year, is reported by yearly Moline tractor performance records received from owners to date. We will be glad to give anyone interested the opportunity to personally inspect these records.

See your Moline Dealer or Write Our Nearest Branch at:

Moline
Atlanta
New Orleans
Dallas

Oklahoma City
St. Louis
Poughkeepsie
Baltimore

Los Angeles
Indianapolis
Stockton
Spokane

Portland
Salt Lake City
Columbus, Ohio
Denver

Kansas City
Omaha
Minneapolis
Jackson, Mich.

Sioux Falls
Des Moines
Bloomington, Ill.
Memphis

MOLINE PLOW COMPANY, MOLINE, ILLINOIS

At the contest at the Ohio State Fair the Dover Thrift Club won third place in the state with 31 county teams competing.

One of the most interesting features of the Muskingum County Fair was the club exhibits and demonstrations by the club members of the county. Two hundred seventy-nine members exhibited 60 pigs, 15 heifer calves, 5 pens of poultry, 139 exhibits of food and 60 exhibits of clothing. Thirteen canning teams competed in demonstration team work. The winning team composed of three girls from Cloverleaf Club at South Zanesville, also demonstrated at the State Fair. With such exhibits as these, sentiment is very strong in the county for club work as a real training for the rural boys and girls.

Earnest Dibert, a pig club boy in Van Wert county, not only won first in individuality with his Poland China gilt in the club class, but in the open classes he won first with her in her class, junior champion and reserve champion of the show. Earnest, however, did not win first in the club work in the county because of the fact that he did not score high enough on his record and story.

Following the fair, Earnest sold his gilt to one of the prominent Poland China breeders of Indiana for \$150.00.

At the Auglaize County Fair there were 121 clothing club exhibits. This is the largest number of clothing club exhibits ever on display at one county fair in the state. This exhibit even surpasses any such exhibit at the State Fair. The quality of the work was in keeping with the quantity. Great interest was taken in this work of the rural girls by the town folks, and sewing club for the city girls may be the result for the towns of Auglaize county.

MEET ME AT

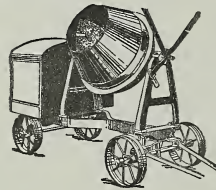
HENNICK'S TIFFIN SHOP

*Light Lunch
Cigars*

**The Finest Place of Its Kind
in the Country.**

POOL ROOM—BARBER SHOP

Dancing Every Evening



CONCRETE MIXERS FOR FARM USE

With or without Power. Built in many sizes. Send for Mixer Catalogue and Book of "How to Make Concrete."

The Jaeger Machine Co.

113 Dublin Ave.
COLUMBUS, OHIO

Do you know that \$70 worth of good Buffalo Corn Gluten Feed mixture, well fed with good roughage, can produce, at current prices, \$245 to \$280 worth of milk?



WITH milk bringing around \$3.50 a hundred pounds, and more than that in many sections, and the price of BUFFALO CORN GLUTEN FEED lower, present and prospective dairy profits are better than they ever have been.

The feeding of high-protein, highly digestible, milk-producing BUFFALO CORN GLUTEN FEED *liberally* to good cows assures you of the largest and most economical milk production—the *widest possible margin of profit* over cost of grain feed.

FEED UP! FEED BUFFALO CORN GLUTEN FEED

Your dealer should have BUFFALO CORN GLUTEN FEED for you. If he does not, write us, saying who and where he is. We will be glad to send you sample and literature.

Corn Products Refining Co.
 New York 1004 Orange Street Chicago

THE HOT LUNCH IN RURAL SCHOOLS

(Continued from page 83.)

school many children ride long distances in the morning, often without any breakfast, and remain in school all day with nothing but a cold lunch at noon, returning late in the evening they are likely to eat a heavy meal and go to bed, and often mothers do not get the

care of food are also closely related to sanitation and can be taught along with hygiene and sanitation. Food composition and nutritive value is a part of physiology. Production, markets, cost of food and account keeping go hand in hand with arithmetic, commercial work, agriculture and economics. By combining these subjects the regular work is made more interesting to the children.



"THE LUNCH PAIL CAREFULLY PACKED."

children up in time to eat a nutritious breakfast and they rush off without any breakfast and a quickly packed lunch pail. Such an arrangement of meals is almost the reverse of what it should be. A nutritious breakfast should be eaten, the lunch pail carefully packed, and a warm lunch at noon. Then a light digestible supper at night and early to bed.

The study of food work can be taught along with other subjects, and little extra time will be required for this work. For example: The source and manufacture of food may be studied in its relation to geography, commerce and agriculture. Canning, preservation and

These lunches can be served in a one-room school the same as in a school where there is a home economics equipment. Care and thought must be given to the management of the lunch. The condition and needs of the school and children should be studied and then a plan worked out which can best be carried out in that particular school. Certain definite principles in regard to the composition and preparation of food should be taught to the pupils in the class room, and applied in the lunch room. The food served should meet the needs of those pupils who wish one or two extras to supplement the lunch brought from home, and those who will

Bell, Main 3884

Ohio State 8752

HALLMARK STORE
WHERE QUALITY IS UNQUESTIONED

The Bancroft Bros. Co.

*Central Ohio's
Leading Jewelers*



138-140 NORTH HIGH ST.

COLUMBUS, OHIO

REMODELING
REPAIRING
RELINING

Jackets, Coats, Suits, Etc.



LEHMAN, DRY CLEANER

OFFICE: 12TH AVE. AND HIGH

Plant Opposite Olentangy Park

DELIVERY
SERVICE

We Insure
Your Garments

depend entirely on the lunch served at school.

The room in which the lunch is prepared should be properly equipped. Some form of water supply and garbage disposal must be provided. Unless the water is piped in, covered water pails should be used. Garbage cans should have covers, and if there is no garbage disposal, it should be burned.

The equipment needed are work tables or ordinary kitchen tables, or tables constructed with cupboards underneath. Cupboards for storing cooking utensils and serving dishes must be provided. Stoves may be gas, oil or gasoline. There should be a few ovens to fit one or two burners. Coal stoves are not as desirable as the ones mentioned above. There should be a set of cooking utensils. The serving dishes consist of cups, spoons and bowls, these may be brought from home or furnished by the school. If brought from home each child should bring his own outfit. Paper napkins may be used and are inexpensive. In order to save time for the class and in managing the lunch room paper or wooden plates can be used. There should be a good supply of dish cloths and drying towels. They may be bought and hemmed by the class. These towels may be sent out to be laundered and the cost added to the meal or taken home and done by the class.

The supplies may be donated by the children. Care should be taken not to burden any one, so that every child can be served free of charge. If a large number of pupils are served, it is necessary to buy the supplies and make a small charge for the food. If there is a space for storage certain supplies may be bought in large quantities. Dried food materials may be bought at wholesale. The school might have a vegetable garden, and the supply of

vegetables obtained from here. The vegetables could be canned cold and packed by the class in home economics. They would keep splendidly canned by this method.

The time required for the serving of the hot lunch should be two class periods coming right at noon. One period for preparation, and the other for cleaning up. Committees should be appointed to look after the work. Each committee should have its own work to do and could consist of students from the same class or from different classes, and alternate each week for this work. Committees should be assigned for: The preparation of food, two girls assigned to prepare one lunch dish; calculating the supplies needed and buying same; keeping accounts; serving; cleaning up and washing the dishes.

In the one room school the lunch is prepared in the rear of the room. If there are vacant seats these can be removed to give more room. The children can use their desks for tables, by spreading a napkin over it. In a centralized grade school the teacher and her pupils pass through the lunch room, supply themselves with lunch and return to their desk to eat. The dishes are then carried back to the lunch room by the committee in charge.

In a township high school the pupils pass by the counter, select the food and carry it to the tables in the lunch room. If the school is crowded, the committee can carry the food to the different rooms where the pupils can help with the serving.

So far nothing has been said about the instructor in charge. It is not necessary for her to be a home economics woman, although it is very good if she has had that training. The situation does require an instructor of ingenuity and enthusiasm for her work.

SEASON 1920-21

Prof. W. J. Rader's Academies of Dancing

NEIL AVE. ACADEMY, 647 Neil Ave.

Phones: Citiz. 4431, Main 6189.

Take Neil Ave. car and get off at Poplar Ave.



Beginners' Classes organize Friday evening, October 8, and Tuesday evening, October 19, 7:30. Very first lesson.

Afternoon Beginners' Class Thursday, 2:30.

Private lessons afternoons or evenings.

Assembly Nights Monday, Thursday. Friday and Saturday, 8:15.

Advance Class, in the front hall, Monday evenings.

Tuition for beginners: Ladies, per term of 10 lessons, \$5.00; Gentlemen, \$6.00; Private Lessons, 5 lessons \$6.00..

Tuition can be paid \$1.00 a lesson until paid.

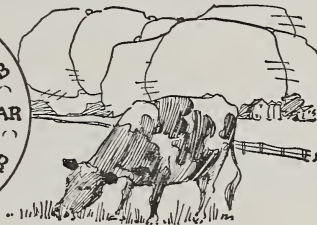
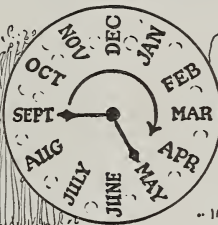
Private lessons can be had afternoons or evenings.

The Waltz, Two-Step, Fox Trot and One-Step taught in one term. Go to the school that gives you thorough instruction.

OAK ST. ACADEMY 827 Oak St.

Citiz. 7195; Residence, Citiz. 4431; Main 6189.

A strictly private place for Sorority and Fraternity dances.



It's Time to Feed More Concentrated Feeds

To make your cows profitable winter milkers you must put more vitality into them *now*. The failing pasture won't do it. They need a scientifically prepared, concentrated feed to keep them in shape and keep up milk production. Here it is.



INTERNATIONAL SPECIAL DAIRY FEED

The Guaranteed Milk Maker

This feed insures you satisfaction and profit—a finely conditioned herd, and a higher milk production instead of a failing one. The guarantee behind International Special has stood pat with thousands of Dairymen. It's not an experiment—it's a paying investment. Make us prove it. Do it before your cows start slipping. Order a ton from your dealer today—or write us for a supply if he doesn't handle it.

INTERNATIONAL SUGAR FEED CO.
MINNEAPOLIS, MINN.

Mills at Minneapolis and Memphis

Live Agents Wanted

HORTICULTURE

EGEVA WISEMAN, Editor; J. C. HOUSER, Assistant.

ORCHARD AND GARDEN

Apples keep better if wrapped in paper.

Still time to plant a few spring flowering bulbs for the window next March and April.

Autumn plowing dislodges many insects as well as makes the garden available for early planting.

Clean up all flower beds, manure them well and spade them under. It is best to leave the soil rough.

Don't bother to follow the advice to force asparagus for winter use. It is not often done successfully. Better use rhubarb and enjoy a good fresh sauce several weeks in the winter.

The chrysanthemum season will soon be here. Have you any plants coming into flower? There are many varieties that might be used in the home with good results.

Late planted gladiolus furnish flowers well into October. More of these bulbs should be planted in the home garden. Few plants give as much enjoyment and at the same time increase for future years.

Don't be in a hurry to bring in the bulbs. A good root system is essential first, then top growth.

Baked squash is nearly, if not quite, as good as sweet potatoes. Squash are easily raised and on rich land are very productive.

Clean and oil all machinery and tools before putting them away for the winter. Rust never did improve the working qualities of a tool.

Mulch well any plants that may have been set this fall. Spring is the best time to set out plants, but sometimes we

have to move plants in autumn if we are to have them.

A light covering of straw on the strawberry bed will protect the foliage, more can be put on later. As a rule but one covering is put on and that when the ground is frozen hard enough to hold up a team. Four or five inches of straw is enough.

Fragrance in flowers is desired by many. One peony grower in Minneapolis has made it a hobby for years to collect scented peonies. Now that he is blind and somewhat deaf, he can still enjoy the varieties, recognizing them by their odor.

Keep grass and weeds away from the apple and plum trees if you expect them to have a whole hide next spring. Mice like to nest in weeds or rubbish near soft bark trees, because they furnish them easy meals during the winter.

Old canes should be cut out of the raspberry bed and burned. They often furnish a home to insects over winter. It is a good plan not to let raspberries grow very thick. Cultivation helps to keep the insects in check as well as encourages the growth of the plant.

VEGETABLE GROWERS'

ASSOCIATION OF AMERICA

Favored by excellent weather and stimulated by the fact that their returns throughout the season had been satisfactory, several hundred market gardeners gathered together for their 12th Annual Convention, which was held at the Horticultural Building from August 25th to August 28th, 1920. President E. A. Dunbar called

(Continued on page 111)

Your Profits Depend on the Package

Your year's work will be thrown away unless your shipments reach the market in saleable condition. Make sure of your profits by shipping in the



Universal Package

Its unusual strength amply protects your shipments against breakage on the way to market. You can stack the loaded packages six and eight tiers high in the car or in your storeroom when the centerpost is used. Covers fasten without nails. Equally adaptable to all fruits and vegetables. Their attractive appearance insures top prices.

PACKAGE SALES CORPORATION

212 S. JEFFERSON ST., SOUTH BEND, IND.

NACO BRANDS

Nitrate of Soda
Potash Salts of All Grades
Nitra PO

(15% Nitrogen, 15% Potash
IN CAR LOTS AT LOWEST
WHOLESALE PRICES

Likewise, less than car lots for shipment at all times from Columbus, Ohio.

Also manufacturers of Arsenate of Lead, Paris Green, Bordeaux Mixture, Calcium Arsenate, etc.

Write us for anything in fertilizer or insecticide line.

Nitrate Agencies Company

408-9 Central Natl Bank Bldg.
COLUMBUS, OHIO

Beat the H. C. L.

Take your old Clothes and Shoes to the

Community Shoe Repair and Tailor Shop

Sixteenth Ave. and High St.

and have them REBUILT and they will look like new. Clothes Cleaned, Pressed, Repaired and Remodeled. Shoes Repaired. Rubber Heels while you wait.

Expert Tailors and Shoemakers

Phone 11217

OHIO STATE FAIR

The Horticultural exhibit from Ohio State was scattered among various exhibits. A great number of the vegetables were seen with the Columbus Vegetable Growers' exhibits, while most of the ferns, palms, and conservatory plans from the greenhouse added greatly to the Indianola Florists' exhibit.

Our own individual exhibit was carried out along the same line that was used last year, showing how to properly plant a front lawn. A small, yet attractive house and porch formed the background for a simple landscape effect of some of the more common shrubs, such as the Globe Flower, Spirea, etc. A neatly-kept open lawn, unobstructed as possible, with the shrubs grouped about the foundation, or along the borders of the grass and in the corners of the lawn, with a few trees for shade, form the foundation of an attractive home planting.

RESPECTABILITY

Have you always been respected by your neighbors?

Do they ask your advice on all important matters?

Do they all speak well of you, and point you out as a leading citizen and a pillar of society?

Has no one ever said that you were beside yourself, or called you crazy, or a crank, or a pestilent fellow?

Have you never been accused of associating with publicans and sinners, or of stirring up the people, or turning the world upside down?

In short, are you thoroughly respectable?

Then beware! you are on the downward road; you are in bad company.

Mend your ways, or you can claim no kinship with the saints and heroes which were before you.—*Ernest Crosby.*

SHOES

A NEW DEPARTMENT AND A NEW STOCK

EMERSON SHOES for College Men

The MENSWEAR SHOP

HIGH AND FIFTEENTH

NEAR THE CAMPUS, OF COURSE

GOODMAN BROTHERS
JEWELERS

No 98 NORTH HIGH ST.

FARMING IN BRITTANY



ENCOMPASSED and guarded by frowning, rocky shore line, her stern lullaby the never-ending surge of waves and rhythmic beat of the surf, lies Brittany, in Northwest France. Upreared as nature's bulwark against the encroachment of Old Ocean, stand vast pillars of rock in fantastic shapes. As tho completing her work of defense, and commemorating victory in the age-old struggle, appear fortresses and monuments, mute reminders of Celt and Roman activity centuries ago.

Charming in rugged character and simplicity, it is indeed fit environment for the people who seem themselves to have partaken of the very nature of the country in which they are, to a great extent, isolated.

Inland, modestly retiring, fertile valleys hold for the tiller of the soil all manner of pleasing prospect. Nature's part has been graciously performed, and man only is laggard in accepting her gifts. The present-day threshing scene, in the manner of more than 100 years ago, is typical of general farming conditions in Brittany.

Naturally conservative, the Bretons cling to old beliefs and customs. Such literature as they have is of an individual nature, principally folk-lore, with its attendant superstitions. Thru these years they have had but limited opportunity and less inclination to

profit by progressive printed matter so easily accessible to the American farmer.

The literature of any people at least expresses, usually determines, their collective ideals. Their advance in no measure beyond its standard, whether it be in the matter of religion, government, business, industry or agriculture. Without the Bible, spiritual darkness existed. Lacking written codes of government, might, not right, prevailed. As trade journals and industrial magazines have taken rank, so have business and industry forged ahead. And as agricultural publications have increased in number and extent of service, so has agriculture come to be recognized as the science upon which rests the prosperity and stability of the people of the world.

All credit for America's agricultural supremacy may not be, and is not, claimed by farm publications, tho they serve well their purpose. Equal honor is due the agricultural colleges and the host of progressive farmers who by word and deed acknowledge the value of such publications; to those also who are permitted to visualize the greater forward movement that will be accomplished when every farmer realizes the benefit of farm papers to him, his family, his community and his country. These thousands are the regular readers of farm publications, standing as staunch friends and allies because of a common interest.

SOILS

C. F. MOSES, Editor; W. E. KEYSER, Assistant.

BASIC SLAG

The use of basic slag as a fertilizer is economically sound according to Mr. Robert Dustman in the August issue of "Timely Soil Topics." Basic slag is a by-product of steel manufacture and is obtained where phosphatic iron ores are used, as in the Birmingham field. Use of by-products is a part of the conservation of our national resources.

The content of phosphoric acid in basic slag has been somewhat variable. But that commonly found on the market now carries 17 to 18 per cent. Purchase should be made on the basis of guaranteed analysis. Solubility in two per cent citric acid solution will give a clue to its solubility. Phosphorus in basic slag is soluble unless adulterated with rock phosphate.

Basic slag is a good fertilizer for grass lands and is only slightly inferior, unit for unit, to acid phosphate for grain production as shown by experiments at Wooster. The production of basic slag can supply only a small part of the demand for phosphorus carriers. Its purchase will be found profitable, but relative cost per unit, convenient source of supply, and use to which it is put will determine which of the several carriers of phosphorus will be most economical.

NEW DIRECTOR

Mr. W. D. Hurd has been elected director of the soils improvement committee of the National Fertilizer Association to succeed Mr. S. B. Haskell, who resigned in order to become director of the Massachusetts Experiment Station at Amherst.

Mr. Hurd is a graduate of Michigan

Agricultural College, has been Dean of the Agricultural College of the University of Maine and Director of the Agricultural Extension Service in Massachusetts.

A NEW FELLOWSHIP

The Soils Improvement Committee of the National Fertilizer Association is desirous of establishing a fellowship at Ohio State University for the purpose of studying methods of application of fertilizers. Details have not been worked out yet.

RYE AND VETCH

FOR WINTER COVER

In the July, 1920, "Timely Soils Topics," Mr. Robert B. Dustman considers the use of cover crops for Ohio conditions. Cover crops furnish a green manure at a time when the land would otherwise be idle and at the same time check erosion and leaching of the elements of fertility.

The use of a cover crop is most important in southern Ohio. Here the winters are more open and leaching and erosion are more active than in the northern part of the state. The hilly character of southeastern Ohio makes erosion especially active there. In the colder winters and on more level lands of the north cover crops have not proved so universally profitable.

Rye would be the best cover crop for Ohio conditions if it were a legume. It withstands acid conditions and other hardships of soil and climate and makes an early growth. The clovers do not do this when fall sown.

However, vetch is a legume which compares favorably with soybeans and

\$735⁶⁸ Milk From A Grade Cow in One Year

Springdale Dairy

JOHN. N. SOUDER
Prop.

The Quaker Oats Co.,
Chicago, U. S. A.

Brunswick, Md.

Jan. 10, 1920

Gentlemen:—

I want you to know how pleased I am and how I like your SCHUMACHER FEED. I have a grade cow nine years old. In 1917 we began weighing our milk, feeding any kind of feed we could get. This cow did fairly well. In 1918 I was able to get your feed the entire season and this cow produced 2,000 lbs., more milk than the year previous. I fed twice daily 20 lbs. of silage and 10 lbs of SCHUMACHER FEED, also mixed clover hay and corn stover. We were not feeding to make a record of any kind.

Her total yearly yield was 1672 gallons of milk for which we got 44c a gallon. The total being \$735.68. The total cost of the feed was \$225.00 leaving a net return of \$510.68. Naturally, I feel that SCHUMACHER FEED is the best feed a dairy-man can feed.

Yours very truly,

(Signed) J. N. Souder

Indisputable Evidence

The letter reproduced above so strikingly confirms, by actual experience, the facts we have been telling dairymen and farmers about SCHUMACHER FEED, particularly as a feed for producing MAXIMUM MILK PRODUCTION and keeping cows in "fine fettle" throughout long milking periods, that it needs little additional comment. It tells what was fed—how fed—the cost and the net returns. Bear in mind this was a *grade cow 9 years old* and no special effort was made to make a record. It is INDISPUTABLE evidence that

SCHUMACHER FEED

is a feed you cannot afford to overlook. Check up your cows—your feed costs and see if they show a big yearly profit. **Start Now**—feed SCHUMACHER FEED—not for a week or a month, but for the entire lactation period of your cows and you'll feel as Mr. Souder does, **THAT IT IS "THE BEST FEED A DAIRY-MAN CAN FEED."**

SCHUMACHER FEED AND BIG "Q" DAIRY RATION

are IDEAL feeds for dairy cows. SCHUMACHER FEED supplies the carbohydrate or maintenance part of the ration and BIG "Q" the protein concentrate portion. Ask your dealer for them. If he cannot supply you, write to us.

The Quaker Oats Company

Address: Chicago, U. S. A.



alsike in tolerance to acidity, and is resistant to winter conditions, making a good growth in ordinary seasons.

As rye is inadequate, and vetch not always sure and vetch seed expensive, a combination of the two is best. The rye supports the vetch which is an advantage. This combination fills the soil with a mass of fibrous roots which take up the soluble elements of fertility and checks leaching, and at the same time holds the soil in place and checks erosion. In addition a considerable amount of organic matter rich in nitrogen is returned to the soil. The cover crop should be turned under as soon as the ground can be worked in order that the moisture supply may not be so depleted as to hinder the growth of the following crop.

DAIRYMEN BENEFIT BY ATTENDING DAIRY SHOW

When men nationally known as breeders of the best dairy cattle or as leading manufacturers of butter or ice cream, and men from the ranks of milk producers, milk dealers and manufacturers of the leading lines of machinery, stand up and give testimony of the actual money they have made by visiting the Annual National Dairy Show, as some ten men recently did at a luncheon in Chicago, then we must concede that the show is functioning. All that is needed is to spread the gospel, that more and more dairy people may each year arrange to get its benefits.

One ice cream and creamery man from California said of the last show, that he had met one man and had seen one machine that would enable him to go home and solve a problem that would net him thousands of dollars in one year and that he would come back in 1920 with a lot of the dairy people from the Pacific Coast. We understand that a

couple of car loads of people are already booked for the trip from California points, so he is making good.

An agricultural publication with wide circulation, interested in forwarding the best possible work for dairying, recently assigned one of its best writers to meet and talk with the leaders of the various branches of dairying, to get their views on the influence of the Dairy Show on dairy agriculture. The group of men brought together for this purpose told in turn what each branch was getting from these annual exhibits and reunions, showing conclusively that giant strides have been made in the industry in the last decade, through inspiration, enthusiasm and knowledge gained at the great National Show.

The various organizations for the purpose of promoting and developing the branch of the industry to which they pertain, the dairy educational

FOR FARM BUTTER OR CHEESE MAKING

HANSEN'S Dairy Preparations

PURE, concentrated, ready to use, absolutely reliable. Giving uniformly best results in the country's finest creameries and cheese factories.

For Cheese-Making: Hansen's Rennet Tablets, Junket Tablets (for Cottage Cheese), Cheese Color Tablets.

For Butter-Making: Hansen's Danish Butter Color (4 oz. and 1 oz. bottles), Hansen's Buttermilk Tablets or Lactic Ferment Culture for perfect ripening of cream for butter and milk for cheese and commercial buttermilk.

Sold by drug or dairy stores, or direct by

CHR. HANSEN'S LABORATORY

Incorporated

LITTLE FALLS, N. Y.

Interesting treatise, "The Story of Cheese," J. D. Frederiksen, free on request.



Hercules Dynamite Dug this Ditch.

Drawn from a photograph of the ditch dug on the farm of C. G. McBride, Bloomsburg, Pa.

And it's a *real ditch*—10 feet wide at the top, 4 feet deep, and 335 feet long. This work reclaimed five acres of land for cultivation.

At the left is a quotation from a letter that Mr. McBride wrote us. It tells pretty plainly what he thinks of the work done with

HERCULES DYNAMITE

Mr. McBride says:

"The entire proposition went far beyond our expectation in every way. . . This project was a new one to all of our people and I think it opened their eyes to the possibilities of the use of explosives that they never realized existed. I am confident that with team and man labor I could not have completed the same piece of work for less than twice the cost, and possibly not at that."

There is no question of the value of dynamite in digging ditches. At a conservative estimate one man with dynamite can dig more ditch in a day than six men with picks and shovels. Tangled roots, rocks, or stumps do not hold up the work.

Dynamite makes a *clean* ditch. It spreads the earth so evenly that there are practically no spoil banks. In many cases long sections of ditch are blasted that need *no further work*.

Send to the Hercules Powder Co. for a copy of "Progressive Cultivation". This 68-page book gives you detailed directions for blasting ditches, clearing land of rocks and stumps, planting trees, breaking up subsoil and doing many other things with the help of Hercules Dynamite.



HERCULES POWDER CO.

1004 Orange Street, Wilmington, Del.

Gentlemen: Please send me a copy of "Progressive Cultivation." I am interested in dynamite for -----

Name -----

Address -----

Hercules Dynamite is for sale at leading Hardware and Implement dealers.

work of the Agricultural Colleges and the Extension Service of the different cattle breeds and the constant pounding of the press, all render a powerful service each year. When this service is supplemented by the rounding up of all activities of the industry for the year, and, adding to that, a real view of what the genius of man has perfected in machinery and equipment, one can get a slight glance of what is to be gained by a ten days gathering of this sort; but no one can get the full benefit of all this endless work unless he makes it a rule to make an annual visit to this great show, October 7th to 16th, 1920, Chicago.

The Boy—At least I can give you the necessities of life. At first you could not expect such luxuries as cooks, mansions and motor(cars).

The Co-ed—But, silly, those are the necessities.—*Stanford Chaparral.*

“I will find a way or make one.”

The only ones who profit by the overall fad were the overall manufacturers and the camera men.

Birth's gude, but breedin' better.—*Scotch Proverb.*

The city people have organized over-all clubs and for once the farmers are in style.

ENTHUSIASM

Last night I held a little hand,

So dainty and so sweet,

I thought my heart would burst with joy

So wildly did it beat.

No other hand unto my soul

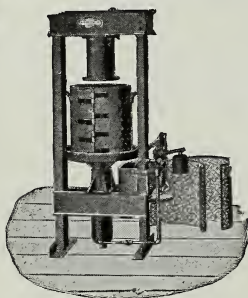
Could greater solace bring

Than what I held last night, which was

Four aces and a king.

—*Williams Purple Cow.*

Animal Husbandry STUDENTS



Just put this little bit of dope back in your mind for reference. It will come in handy some day. It is this: We manufacture

**H. P. M.
Hydraulic
Curb Presses**

for extracting lard, grease, tallow, etc. These presses are giving excellent satisfaction to all users. Send for illustrated catalogs or any information you may desire

The Hydraulic Press Mfg. Co.

Mount Gilead, Ohio

FOR GOOD THINGS TO EAT MARZETTI'S RESTAURANT

1548 N. High St.

59 East Gay St.

**STEAKS, CHOPS, CHICKEN,
ITALIAN DISHES, ETC.**

Special Dinner and Lunches

**ANYTHING SERVED
ANYTIME**

**Table Service—Reasonable Prices
Pleasant Surroundings
Cool Room**

WE SERVE ONLY THE BEST



"The Perfection is the greatest labor saver on the farm and is going to save the dairy industry. I would have been forced to sell my herd if I had not had my Perfection."
—G. E. FERSENBECKER.

You Can Keep Your Herd Without Hired Help

HAVE you been thinking of selling your herd because you can't get enough help for milking? Then you are one of those dairy farmers who need a Perfection Milker. Don't sell your cows! Milk with a Perfection and forget the shortage of labor.

Thousands of dairy farmers have solved their labor problems with Perfection Milkers. One man with a Perfection Milker milks twenty-four cows an hour. He takes the place of three men milking by hand. At this rate what would be your saving on wages? The Perfection more than pays for itself in wages saved in a year's time.

Many Perfection owners are increasing the size of their herds. They tell us their young sons or daughters do the entire milking every day with the Perfection Milker. Not only does Perfection save time and money, but thousands of users will tell you it has increased the milk flow in their herds. In the Perfection the gentle suction followed by a downward squeeze and a period of rest, duplicates perfectly the action of the calf.

Send For Catalog

Send for a copy of our book "What the Dairyman Wants to Know." It's free. We shall also be glad to give you the names and addresses of Perfection owners near you.

Why milk by hand? It is too expensive.

Perfection Manufacturing Company
2143 East Hennepin Avenue Minneapolis, Minnesota

**PERFECTION
MILKER**

HORTICULTURE

(Continued from page 100)

the convention to order and each day plans for the future and present-day problems were discussed.

One important subject was that of truly named seeds. The standardization of seeds has become a really critical problem; in fact, it has become so acute that the growers, wearying of individual efforts, are taking steps in cooperation with seed men to control the selling of under-standard seeds. Although it will be a long and tiresome process to standardize varieties, F. C. Stokes, of the Stokes Seed Company, of Morristown, Pa., stated that the outlook is good.

Professor J. H. Beattie of the U. S. Department of Agriculture, in his address, "The Present Status of the Vegetable Forcing Industry in Its Relation to Outdoor Grown Crops," brought out four main facts, viz., better planned cropping systems, careful cultural methods, better methods of marketing by cooperation, resulting in careful grading and better packing, and choice of equipment and house designing for the purpose of economizing fuel.

The discussion relating to "Up-to-Date Greenhouse Problems" was opened by Dr. G. H. Coons, of Michigan State Agricultural College, who said "Soil sanitation in a greenhouse is a much larger thing than stepping to a steam pipe and turning on steam (as done in sterilization); soil sanitation is the corner stone of the vegetable business. The soil must not be water logged or packed, the former being acid and diminishing the growth of bacteria and hard packed soil having the same effect." He advocated a strict quarantine on all seeds and plants that come into a greenhouse.

Another interesting subject was discussed by Dr. B. G. Baldwin, of Ash-tabula, Ohio, who talked on "Bees for the Greenhouse." He spoke of cucumbers as an example of plants which in a greenhouse must be pollinated either by hand or by insects.

Bees bought for a greenhouse should be inspected by a state inspector. Food must be supplied for the colony, for their flight is so limited that they could not possibly obtain enough from the crop in the house. Bees should not be kept in a greenhouse during the winter for if the temperature is about 67 degrees, they will start to fly, which means the loss of a large part of the colony. Unless returned to the farmer, they should be well packed and kept in a dark place. About apple blossom time, they should be brought in and the house ventilators opened so as to allow them to pass out. Later a whole pane should be taken out and the hive set outside in such a position that their first flight will carry them into the greenhouse.

Twice as many colonies should be on hand as are to be used for under glass they depreciate rapidly. Many are killed by bumping their heads on the glass, while many others get lost when flying outside. The nectar in the cucumber blossoms which attracts the bees flow at a temperature of between 62 degrees and 72 degrees.

A big picnic dinner served near Mirror Lake by the wives and members of the local growers' association, and a motor trip to Newark to visit the greenhouses of Warren S. Weiant & Son, were among the many social features which made the convention so interesting and successful.

H. P. MULFORD.

More Eggs or Money Back!

The Purina System of Feeding keeps the flock laying in the fall and winter, because it supplies plenty of material for **whites** as well as for yolks, which enables the hen to make complete eggs of all the yolks that develop in her body.

Why Purina Chows make more eggs than grain feeds

When a grain ration is fed there is not enough protein for whites. As a result, many yolks that form are **not laid**, and are eventually absorbed back into the system as fat. The elements in wheat, corn, barley and kafir provide for an average of 239 yolks **and only 147 whites**. The following table clearly shows that the Purina Chows supply enough whites to make complete eggs of all the yolks a hen is able to produce:

	Yolks	Whites
50 lbs. of Purina Hen Chow (Scratch Feed)	123	71
50 lbs. of Purina Chicken Chowder	91	141
100 lbs. of Combined Ration (fed half and half)	214	212

Feed from the Checkerboard Bags

More Eggs Guarantee

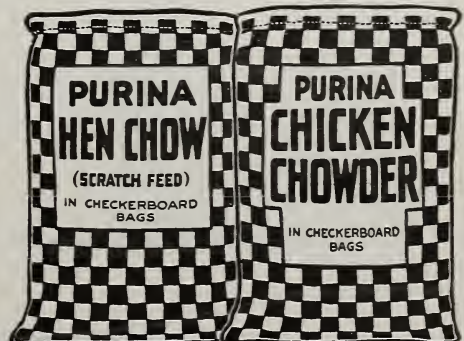
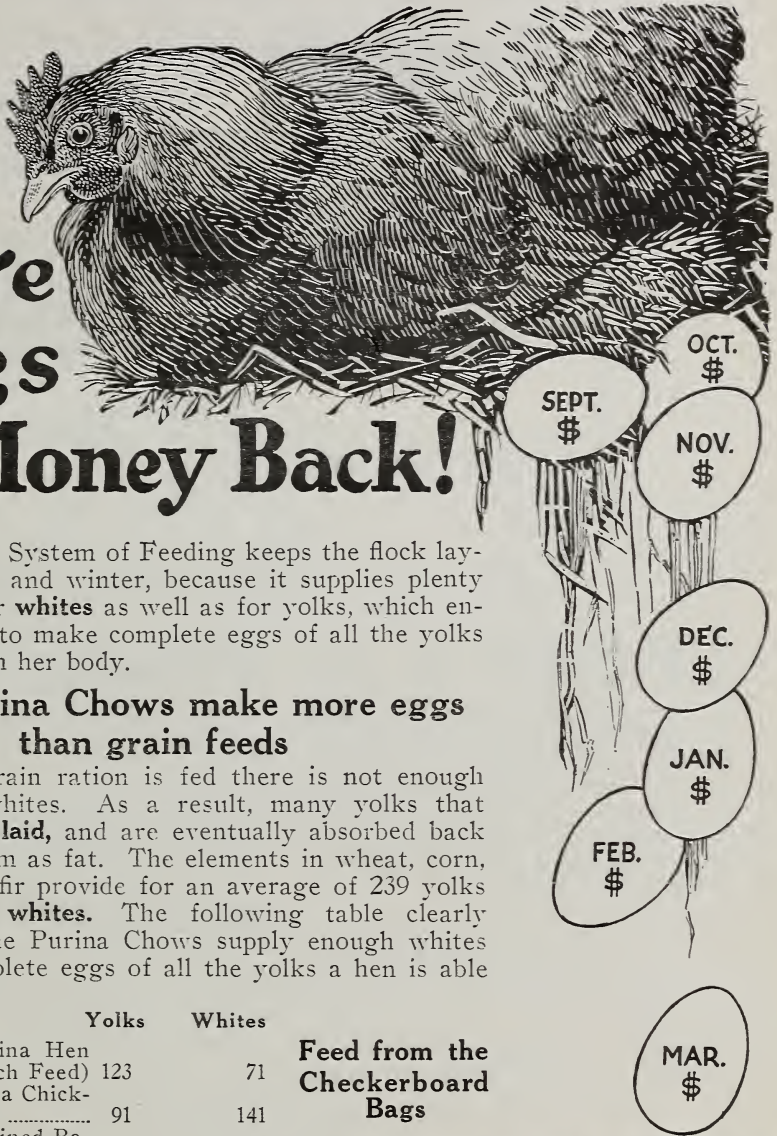
The money paid for both Chows will be refunded if hens when fed Purina Chicken Chowder with Purina Hen Chow, as directed, do not lay more eggs than when fed any other ration.

Write for the New "Purina Book," just out.

RALSTON PURINA COMPANY

St. Louis, Mo.
Ft. Worth, Texas

Nashville, Tenn.
Buffalo, N. Y.





**HARD THIS WAY
BUT—**



**EASY ON A TRACK
THE CLETRAC WAY**



Parable of the Wheelbarrow

PROGRESSIVE farmers everywhere are turning to the all-purpose, tank-type Cletrac. The reason is plain—the “Cletrac Principle.” Here’s an illustration that explains it.

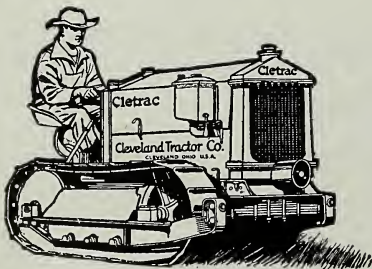
The man at the left finds his heavily loaded wheelbarrow stalled in the soft earth. He does the natural, *sensible* thing—lays a track of boards over the loose ground.

The weight of the load is now distributed over the broad surface of the boards and he no longer wastes energy in pushing *against* the soil.

This simple parable illustrates the “Cletrac Principle.”

The Cletrac lays its own board-like tracks over any footing. All the weight is distributed over 800 square inches of tractive surface. So, just as in the case of the wheelbarrow on the boards, there’s no power wasted in “pushing out of the rut.”

We’ll gladly furnish you with material that tells you the complete story of the Cletrac.



The Cleveland Tractor Co.

“Largest Producers of Tank-Type Tractors in the World”
19123 Euclid Ave., Cleveland, Ohio

NOW
IS THE TIME TO
SUBSCRIBE for

The Agricultural Student

“ . . . for the promotion of higher ideals and practical ideas in the interest of Agriculture.”

\$1.50 A YEAR;
\$2.75 FOR TWO YEARS;
\$3.50 FOR THREE YEARS.

Mail Coupon and Your Check to
THE AGRICULTURAL STUDENT,
OHIO STATE UNIVERSITY
COLUMBUS, OHIO.

GENTLEMEN:

Enclosed find \$.....for which please send
me The Agricultural Student for.....years.

NAME

ADDRESS

There's Just One 100% Efficient Cream Separator

And That's the

DE LAVAL

For Forty Years

The World's Standard

There may be a half dozen plows, wagons, tractors, autos or other farm equipment to choose between, but no would-be imitator or utilizer of expired De Laval patents has yet produced a cream separator comparable with the De Laval.



First in the beginning, De Laval machines have led in every step of cream separator improvement and development. Every year has presented some new feature or betterment, and the 1920 machines are still better than they have ever been before.

If you haven't seen or tried a new 1920 De Laval machine, any local agent will be glad to afford you the opportunity to do so.

If you don't know the nearest De Laval local agent simply address the nearest main office, as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway
NEW YORK

29 East Madison Street
CHICAGO

61 Beale Street
SAN FRANCISCO

50,000 Branches and Local Agencies the World Over